SMITHSONIAN INSTITUTION

UNITED STATES NATIONAL MUSEUM

REPORT ON THE PROGRESS AND CONDITION OF THE UNITED STATES NATIONAL MUSEUM FOR THE YEAR ENDING JUNE 30, 1916

WASHINGTON
GOVERNMENT PRINTING OFFICE
1917

UNITED STATES NATIONAL MUSEUM,
UNDER DIRECTION OF THE SMITHSONIAN INSTITUTION,
Washington, D. C., February 10, 1917.

SIR: I have the honor to submit herewith a report upon the present condition of the United States National Museum and upon the work accomplished in its various departments during the fiscal year ending June 30, 1916.

Very respectfully,

RICHARD RATHBUN,
Assistant Secretary, in charge of the National Museum.

DR. CHARLES D. WALCOTT,
Secretary, Smithsonian Institution.

CONTENTS.

	Page.
Inception and history	7
Operations of the year	13
Appropriations	13
Buildings and equipment	13
Collections	15
Department of Anthropology	16
Department of Biology	31
Department of Geology	50
Arts and industries	62
Distribution and exchange of specimens	78
National Gallery of Art	79
Meetings and congresses	87
Special exhibitions	94
Miscellaneous	128
Visitors	128
Bequests	130
Publications	131
Library	132
Expositions	132
Organization and staff	133
The Museum staff	135
List of accessions	137
List of publications	183

REPORT ON THE PROGRESS AND CONDITION OF THE UNITED STATES NATIONAL MUSEUM FOR THE YEAR ENDING JUNE 30, 1916.

By Richard Rathbun,

Assistant Secretary of the Smithsonian Institution, in charge of the U. S. National Museum.

INCEPTION AND HISTORY.

The Congress of the United States in the act of August 10, 1846, founding the Smithsonian Institution recognized that an opportunity was afforded, in carrying out the large-minded design of Smithson, to provide for the custody of the museum of the Nation. To this new establishment was therefore intrusted the care of the national collections, a course that time has fully justified.

In the beginning the cost of maintaining the museum side of the Institution's work was wholly paid from the Smithsonian income; then for a time the Government bore a share, and during the past 40 years Congress has voted the entire funds for the expenses of the museum, thus furthering one of the primary means "for the increase and diffusion of knowledge among men" without encroaching upon the resources of the Institution.

The museum idea was inherent in the establishment of the Smithsonian Institution, which in its turn was based upon a 10 years' discussion in Congress and the advice of the most distinguished scientific men, educators, and intellectual leaders of the Nation of 70 years ago. It is interesting to note how broad and comprehensive were the views which actuated our lawmakers in determining the scope of the Museum, a fact especially remarkable when it is recalled that at that date no museum of considerable size existed in the United States, and the museums of England and of the continent of Europe were still to a large extent without a developed plan, although containing many rich collections.

The Congress which passed the act of foundation enumerated as within the scope of the Museum "all objects of art and of foreign and curious research and all objects of natural history, plants, and geo-

logical and mineralogical specimens belonging to the United States," thus stamping the Museum at the very outset as one of the widest range and at the same time as the Museum of the United States. It was also appreciated that additions would be necessary to the collections then in existence, and provision was made for their increase by the exchange of duplicate specimens, by donations, and by other means.

If the wisdom of Congress in so fully providing for a museum in the Smithsonian law challenges attention, the interpretation put upon this law by the Board of Regents within less than six months from the passage of the act can not but command admiration. In the early part of September, 1846, the Regents took steps toward formulating a plan of operations. The report of the committee appointed for this purpose, submitted in December and January following, shows a thorough consideration of the subject in both the spirit and letter of the law. It would seem not out of place to cite here the first pronouncement of the board with reference to the character of the Museum:

"In obedience to the requirements of the charter,[1] which leaves little discretion in regard to the extent of accommodations to be provided, your committee recommend that there be included in the building a museum of liberal size, fitted up to receive the collections destined for the Institution. * * *

"As important as the cabinets of natural history by the charter required to be included in the Museum, your committee regard its ethnological portion, including all collections that may supply items in the physical history of our species, and illustrate the manners, customs, religions, and progressive advance of the various nations of the world; as, for example, collections of skulls, skeletons, portraits, dresses, implements, weapons, idols, antiquities, of the various races of man. * * * In this connexion your committee recommend the passage of resolutions asking the cooperation of certain public functionaries and of the public generally in furtherance of the above objects.

"Your committee are further of opinion that in the Museum, if the funds of the Institution permit, might judiciously be included various series of models illustrating the progress of some of the most useful inventions; such, for example, as the steam engine from its earliest and rudest form to its present most improved state; but this they propose only so far as it may not encroach on ground already covered by the numerous models in the Patent Office.

"Specimens of staple materials, of their gradual manufacture, and of the finished product of manufactures and the arts may also, your

[1] Since the Institution was not chartered in a legal sense, but established by Congress, the use of the word "charter" in this connection was not correct.

committee think, be usefully introduced. This would supply opportunity to examine samples of the best manufactured articles our country affords, and to judge her gradual progress in arts and manufactures. * * *

"The gallery of art, your committee think, should include both paintings and sculpture, as well as engravings and architectural designs; and it is desirable to have in connexion with it one or more studios in which young artists might copy without interruption, being admitted under such regulations as the board may prescribe. Your committee also think that, as the collection of paintings and sculpture will probably accumulate slowly, the room destined for a gallery of art might properly and usefully meanwhile be occupied during the sessions of Congress as an exhibition room for the works of artists generally; and the extent and general usefulness of such an exhibit might probably be increased if an arrangement could be effected with the Academy of Design, the Arts Union, the Artists' Fund Society, and other associations of similar character, so as to concentrate at the metropolis for a certain portion of each winter the best results of talent in the fine arts."

The important points in the foregoing report are (1) that it was the opinion of the Regents that a museum was requisite under the law, Congress having left no discretion in the matter; (2) that ethnology and anthropology, though not specially named, were yet as important subjects as natural history; (3) that the history of the progress of useful inventions and the collection of the raw materials and products of the manufactures and arts should also be provided for; (4) for the gallery of art the committee had models in existence, and they proposed, pending the gathering of art collections, which would of necessity be slow, to provide for loan exhibitions by cooperating with art academies and societies.

In the resolutions which were adopted upon the presentation of the report, a museum was mentioned as "one of the principal modes of executing the act and trust."[1] The work was to go forward as the funds permitted, and, as is well known, the maintenance of the Museum and the library was long ago assumed by Congress, the Institution taking upon itself only so much of the necessary responsibility for the administration of these and subsequent additions to its

[1] *Resolved*, That it is the intention of the act of Congress establishing the Institution, and in accordance with the design of Mr. Smithson, as expressed in his will, that one of the principal modes of executing the act and the trust is the accumulation of collections of specimens and objects of natural history and of elegant art, and the gradual formation of a library of valuable works pertaining to all departments of human knowledge, to the end that a copious storehouse of materials of science, literature, and art may be provided which shall excite and diffuse the love of learning among men, and shall assist the original investigations and efforts of those who may devote themselves to the pursuit of any branch of knowledge.

activities as would weld them into a compact whole, which together form a unique and notable agency for the increase and diffusion of knowledge, for the direction of research, for cooperation with departments of the Government and with universities and scientific societies in America, and likewise afford a definite correspondent to all scientific institutions and men abroad who seek interchange of views or knowledge with men of science in the United States.

Since that early day the only material change in the scope of the Government Museum has been the addition of a department of American history, intended to illustrate by an appropriate assemblage of objects the lives of distinguished personages, important events, and the domestic life of the country from the colonial period to the present time.

The development of the Museum has been greatest in those subjects which the conditions of the past three-quarters of a century have made most fruitful—the natural history, geology, ethnology, and archeology of the United States, supplemented by many collections from other countries. The opportunities for acquisition in these directions have been mainly brought about through the activities of the scientific and economic surveys of the Government, many of which are the direct outgrowths of earlier explorations, stimulated or directed by the Smithsonian Institution. The Centennial Exhibition of 1876 afforded the first opportunity for establishing a department of the industrial arts, of which the fullest advantage has been taken, but the department or gallery of the fine arts made little progress, though not from lack of desire or appreciation, until ten years ago, when circumstances led to its definite recognition.

While it is the primary duty of a museum to preserve the objects confided to its care, as it is that of a library to preserve its books and manuscripts, yet the importance of public collections rests not upon the mere basis of custodianship nor upon the number of specimens assembled and their money value, but upon the use to which they are put. Judged by this standard, the National Museum may claim to have reached a high state of efficiency. From an educational point of view it is of great value to those persons who are so fortunate as to reside in Washington or who are able to visit the Nation's capital. In its well-designed cases, in which every detail of structure, appointment, and color is considered, a selection of representative objects is placed on view to the public, all being carefully labeled individually and in groups. The child as well as the adult has been provided for and the kindergarten pupil and the high-school scholar can be seen here supplementing their class-room games or studies. Under authority from Congress the small colleges and higher grades of schools and academies throughout the land, especially in places where museums do not exist, are also being aided

in their educational work by sets of duplicate specimens, selected and labeled to meet the needs of both teachers and pupils.

Nor has the elementary or even the higher education been by any means the sole gainer from the work of the Museum. To advance knowledge, to gradually extend the boundaries of learning, has been one of the great tasks to which the Museum, in consonance with the spirit of the Institution, has set itself from the first. Its staff, though chiefly engaged in the duties incident to the care, classification, and labeling of collections in order that they may be accessible to the public and to students, has yet in these operations made important discoveries in every department of the Museum's activities, which have in turn been communicated to other scholars through its numerous publications. But the collections have not been held for the study of the staff nor for the scientific advancement of those belonging to the establishment. Most freely have they been put at the disposal of investigators connected with other institutions, without whose help the record of scientific progress based upon the material in the Museum would have been greatly curtailed. When it is possible to so arrange, the investigator comes to Washington; otherwise such collections as he needs are sent to him, whether he resides in this country or abroad. In this manner practically every prominent specialist throughout the world interested in the subjects here well represented has had some use of the collections and thereby the National Museum has come to be recognized as a conspicuous factor in the advancement of knowledge wherever civilization has a foothold.

OPERATIONS OF THE YEAR.

APPROPRIATIONS.

The maintenance and operations of the National Museum for the year covered by this report, namely, from July 1, 1915, to June 30, 1916, inclusive, were provided for by the following items of appropriation in the sundry civil act approved March 3, 1915:

Preservation of collections	$300,000
Furniture and fixtures	25,000
Heating and lighting	46,000
Building repairs	15,000
Purchase of books	2,000
Postage	500
Printing and binding	37,500
Total	426,000

BUILDINGS AND EQUIPMENT.

Over one half the entire appropriation for repairs was required to be expended in connection with the roofs on the new building, the defective condition of which has been discussed in previous reports. The work included the refastening of about 12,500 lineal feet of copper covering, the replacing of 25 lineal feet with new copper, and the remodeling of the west skylight and of that part of the north skylight not finished the previous year. Serious leaks in the upper story of the building were traced to and necessitated the repointing of joints in the three courses of stone adjoining the roofs in the west court, and also in the outer stonework of the west range above the main cornice. The exterior metal framework and sills of all first and second story windows in the courts were painted, as were the walls of the auditorium which had become defaced through the seepage of moisture. For the protection of floors showing wear, a part of the wood surfaces in the corridors of the third story was covered with a preparation of cork, while all of the cement pavement in the corridors in the ground story was treated with cement paint.

The principal exterior repairs to the older Museum building consisted in replacing the slate on one of the corner pavilions, in repairing the slate roofs on the towers at the middle of each façade, and in repairing and painting all woodwork above the cornice. The repair

work in the interior of this building was mainly restricted to extending certain fireproof protecting walls, repairing, pointing up and painting defaced walls, and replacing worn out floors. The taxidermist shop, which has for several years been temporarily occupying about one-half the area of the south-east range, was removed to its former quarters in the south shed, and the space so released was assigned to the division of mechanical technology for exhibition collections.

The changes which have been in progress, under special appropriations by Congress, to adapt the great hall in the Smithsonian building to the present needs of the Institution and the Museum were completed in the fall of the year. The final work consisted in finishing the western bookstack, in painting the walls, piers and ceilings, and in the installation of an electric lighting system. The last, specially designed for the hall, comprehends a 24-inch inverted holophane bowl, containing eight 60-watt lamps, placed below a hollow or domed recess in the center of each of the 33 ceiling panels and at a distance of only about 4½ inches from the surface. The bowls have a slight brownish tint, deepening somewhat in shade in the thicker parts of the ornamental design, and harmonizing with the color of the room. The lighting is therefore entirely from the ceiling, pleasing in effect and ample for all purposes. Taking advantage of the closing of the large hall, the children's room, which adjoins it in the south tower, the creation of Secretary Langley, was also repainted and refurbished and its collections were rearranged, greatly improving its appearance.

The power plant was closed down as usual during about two months of the summer, or from July 3 to September 7, to permit of the overhauling of the boilers and machinery without interruption, the electric current required for lighting and other purposes being obtained from a local company at the low rate of 2½ cents per kilowatt hour. The employees in this department were also given the greater part of their leave during this period. No repairs of special importance were called for, but the plant was placed in such excellent condition that its operation throughout the year was attended with no serious troubles of any kind. The total amount of coal consumed was 2,833 tons, and steam was used for heating purposes from October 1 to May 20.

The amount of electric current generated was greater than in previous years, as more lights were used and it had been found necessary to increase the size of the lamps in most of the exhibition halls in the new building. While this increase in load caused an increase in the total cost of the electric current for the year, the cost per unit was reduced below any prior record, having been at the rate of 2.221 cents per kilowatt hour. A beginning was made toward replacing the obsolete arc lamps in the older building with an incan-

descent system similar to that in the new building, the lamp containers to consist of suspended holophane veluria bowls. The change was effected in the hall devoted to historic costumes, and will be extended as rapidly as possible. Some new methods of direct lighting of individual exhibits were also introduced.

Ice, to the extent of 325 tons, was manufactured at the rate of $2.75 a ton, this increase in cost as compared with the previous year arising from the necessity of replacing the motor belonging to the plant with one of an improved pattern.

Furniture was acquired during the year as follows: Twenty-two exhibition cases, 85 storage cases and pieces of laboratory furniture, 119 pieces of office and miscellaneous furniture, 862 wooden unit specimen drawers, 503 insect drawers, and 358 specimen drawers of special kinds. Eighteen pieces of old furniture were condemned. At the close of the year the following were on hand, namely, 3,500 exhibition cases, 7,101 storage cases and pieces of laboratory furniture, 3,532 pieces of office and miscellaneous furniture, 43,066 wooden unit specimen drawers, 4,712 metal unit specimen drawers, 9,422 insect drawers, and 18,260 miscellaneous specimen drawers and boxes of various kinds. The exhibition cases were mainly constructed in the Museum shops, while the storage and other furniture was mostly obtained from contractors. Other work performed by Museum employees consisted in the remodeling and repair of old furniture, and the making of fittings and accessories for both exhibition and storage cases, and for the exhibition halls in general.

Plans and specifications for the construction of various patterns of the furniture designed for the National Museum were supplied, on request, to 16 museums and other establishments elsewhere.

COLLECTIONS.

The total number of specimens acquired during the year was approximately 243,733. Received in 1,525 separate accessions, they were classified and assigned as follows: Department of anthropology, 29,493; zoology, 120,303; botany, 40,631; geology and mineralogy, 1,700; paleontology, 48,403; textiles, woods, and other animal and vegetable products, 2,304; mineral technology, 280; and the National Gallery of Art, 619. As loans for exhibition, 1,960 articles were also obtained, mainly for the Gallery of Art and the divisions of history and ethnology.

Material for examination and report, consisting chiefly of rocks, ores, fossils, and recent animals and plants, was received to the extent of 1,036 lots.

DEPARTMENT OF ANTHROPOLOGY.

Ethnology.—One of the most important acquisitions by the division of ethnology was a series of costumes, weapons and utensils—excellent illustrations of the arts and industries of recently discovered tribes in the interior of British Guiana, collected by Mr. John Ogilvie, which, after being shown at the Panama-Pacific International Exposition, was deposited in the Museum by the Government Board of Exhibits. An addition by Dr. W. L. Abbott to his generous contributions from that region comprised many articles, including blowguns and costumes, made and used by the hill tribes of Celebes, and a number of baskets and sleeping mats from Borneo, procured by Mr. H. C. Raven. From Dr. C. Hart Merriam, of Washington, was received a prepared human head from the upper Tapajos River, Brazil, a trophy of which few examples have found their way into public collections.

Among the other gifts were baskets, ornaments, etc., representing various North American Indian tribes, brass utensils and weapons of Philippine and oriental manufacture, and many other objects of value, from Mrs. Caroline E. Bates, of Washington; weapons, musical instruments and baskets of several Philippine tribes, from Mr. E. H. Hammond, of Albuquerque, N. Mex.; a suit of Philippine brass armor, a number of weapons and a carved wooden figure representing an Igorot tutelary deity, from Maj. Edgar Russel, U. S. Army, and Mrs. Russel; a polo stick and a number of Filipino weapons, from Maj. W. T. Johnston, U. S. Army; a collection of Moro costumes and baskets, from Capt. J. R. Harris, U. S. Army; and art objects and ethnologica from many parts of the world, from Miss Louise Salter Codwise, of Kingston, N. Y.

The Bureau of American Ethnology transferred a sacred Hawk bundle of the Osage Indians which had been secured by Mr. Francis La Flesche, a set of Osage ear perforators, ceremonial implements of great rarity and an Osage war shield. A number of objects chiefly associated with the subject of heat and illumination, including lamps, candlesticks, urns, censers and fire tongs, were obtained in exchange from Mr. Anton Heitmuller, of Washington; and a collection of costumes and implements from the Greenland Eskimo and the Blackfeet Indians was purchased.

Mrs. Allan McLane and Miss Frances Densmore, both of Washington, made additions to their already important collections on deposit, the former of archaic Chinese coins, art objects, etc., the latter of ethnological material procured during her recent researches among the Chippewa and the Mandan and Hidatsa Indians. Comprised in other loans were miscellaneous costumes, ornaments and curios representing the peoples of many countries, from Mrs. R. G. Hoes, of Washington; examples of oriental jewelry, from Mrs. J. E.

Zimmerman, of New York; and a rare example of a sun dance robe of the Blackfeet Indians, from Mr. Ira C. Wetherill, of Erica, Va.

The curator of the division, Dr. Walter Hough, took part in assembling the special exhibit for the International Congress of Americanists, and spent the month of February at San Diego in installing for the Panama-California Exposition the exhibits of ethnology sent there from San Francisco. In the middle of June he was detailed to field work in New Mexico. His investigations relative to heating and illumination were continued, as were also those on the Hopi Pueblo Indian collection, and several short papers bearing on phases of these subjects were prepared.

American archeology.—While under detail to the Bureau of American Ethnology, Mr. Neil M. Judd, aid in ethnology, made an extensive collection of archeological material, including artifacts of many varieties, from mounds and ruin sites in Utah, which is of particular value in assisting to determine the distribution of Pueblo culture toward the north. This collection was transferred by the Bureau, as was also a stone collar or yoke found in San German, P. R. Mr. Frank Springer, an associate of the Museum, presented a large number of specimens from Decatur County, Ind.; and Dr. Julio C. Tello, of Lima, several examples of quipus, woven fabrics and pottery from Peru. The following were purchased: Three monolithic stone hatchets, obtained from a Mosquito Indian chief in Nicaragua; a large chipped flint blade classed as an Indian hoe, from Clay County, Ark.; and an ancient Indian pipe of cavern alabaster carved to represent an owl, found with a skeleton in a cave in Harrison County, W. Va. A gold ornament representing a bird, from Colombia, was deposited by Mr. Guido Schroedl, of Baltimore, Md.

Mr. William H. Holmes, head curator of the department of anthropology, continued with his general work on American antiquities, and Mr. Neil M. Judd began the preparation of a report on his researches in Utah.

Old World archeology.—To Miss Louise Salter Codwise, of Kingston, N. Y., this division was greatly indebted for the gift of a collection of oriental antiquities, consisting mainly of Egyptian scarabs, necklaces and figurines, and Palestinian amulets. Casts of four canopic vases, taken from the originals in limestone, found at Thebes, Egypt, in 1895, and now preserved in the Archaeological Museum of the University of Pennsylvania, were received in exchange from that museum. From the University of Dublin, also as an exchange, was obtained a collection of prehistoric stone implements from Great Britain, including some rare specimens, and contributing toward rounding out the section of the Museum exhibit to which they relate. A large number of examples of antique iridescent glassware from

Italy and Syria, comprising perfume bottles, vases, dishes, bracelets and beads were lent for exhibition by Miss Isobel H. Lenman, of Washington.

The assistant curator in charge of the division, Dr. I. M. Casanowicz, made studies of the magical lore and practices among the Jews and Koreans, and papers on these subjects were prepared and submitted for publication.

Physical anthropology.—Mr. Clarence B. Moore, of Philadelphia, contributed a large number of skeletons and skulls in very complete condition and with careful notes, which he had obtained at "The Indian Knoll" on the Green River, Ohio County, Ky. Mr. George G. Heye, of New York, presented a similar but smaller collection resulting from his exploration of old burial sites in Georgia and Tennessee. Indian skulls and jaws from Michigan, including several good types of Algonquin crania, were donated by Mr. Byron E. Dodge, of Davison, Mich.; and several skulls and other bones from Northampton County, Pa., a region thus far but poorly represented in anthropological collections, were received as a gift from Mr. Walter P. Lewis, of Phillipsburg, N. J. Mr. August Busck, of the Bureau of Entomology, while conducting investigations in Hawaii, obtained for the Museum an excellent series of skulls and numerous other bones, procured in old burial caves and belonging to the period before the advent of the whites. Valuable series of brains, embryos and other anatomical material, important additions to the collection, were contributed by Dr. J. Holmes Smith, of the University of Maryland, and Prof. Robert Bennett Bean, of Tulane University, New Orleans, La.

The researches by the curator of the division, Dr. Aleš Hrdlička, related mainly to the skeletal remains of the Indians of the eastern part of this country. These were completed as far as the available collections permitted, and the results were published under the title "Physical anthropology of the Lenape or Delawares, and of the eastern Indians in general," by the Bureau of American Ethnology. Dr. Hrdlička also continued his investigations on the physical characteristics of the old White Americans, and similar studies on the principal classes of immigrants were conducted under his direction at Ellis Island, N. Y.

Mechanical technology.—A set of telephone instruments and of loading coils together with examples of line wire and glass insulators used at the opening of the first telephone line between New York and San Francisco, January 25, 1915, photographs of the groups of persons present on that occasion, and also a duplicate of the first instrument through which speech was transmitted electrically in Boston, Mass., in 1875, were received as a gift from the American Telephone and Telegraph Co. Appropriately supplementing this was a loan from

Dr. Alexander Graham Bell of a number of interesting documents indicative of honors which have been conferred upon him, including diplomas, certificates of award, and announcements of membership in various scientific societies. Ten current-meters used by the Geological Survey for measuring the velocity and quantity of the flow of water in streams, showing the development of the apparatus for this purpose between 1870 and 1915, were deposited by that Bureau.

To Mrs. Caroline E. Bates, of Washington, the division was indebted for the donation of a collection of much historical value, including military guns of European and American manufacture, some of which had been altered from flint to percussion cap locks, single and double-barrel pistols and revolvers, one Lefaucheux 12-shot revolver of .35 caliber; several Toledo swords, one officer's sword made by the Ames Manufacturing Co., of Cabotville, Mass., in 1849; one gun made by natives of the Philippine Islands of 1¼-inch iron pipe wound with wire and fitted with a rough wood stock; two very fine bronze swivel guns, evidently of European make, covered with rich decorations cast in the metal, one 46 inches long and 1¼-inch bore, the other 48 inches long and 1¼-inch bore; one sextant made by Thomas Ripley, London, and one brass sundial, 14 inches square with 5-inch gnomon. Mrs. Bates also lent a crossbow of superior workmanship. Mr. H. I. Houston, of Washington, presented a finely finished double-barrel shotgun, 12 bore, of the type brought into use about 1845, made by Parker Brothers, of Meriden, Conn.; and Mr. Richard Rathbun, a pair of flint-lock, brass-barrel, bell-muzzle Tower pistols.

A contribution from Capt. Charles W. Maynard, of Detroit, Mich., comprised many relics of the Civil War, among which were an infantry officer's sword, a powder-and-ball 5-chambered Colt's revolver, 5½-inch barrel and .36 caliber; a pair each of a first lieutenant's service and dress shoulder straps; a set of private soldier's eating utensils, knife, fork and spoons; several military passes and "fall out" tickets; a section of a tree with embedded rifle ball, and shells, bullets, cartridges, etc., from several important battle fields.

An interesting loan collection from Mrs. R. G. Hoes, of Washington, contained several powder horns covered with crude engravings of military and naval emblems, animals, mottoes, etc.; a European hunter's horn, two flint-lock brass-barrel pistols made by Sharpe of London, a powder-testing pistol and a number of oriental daggers; several United States army officers' swords of American, Spanish and German make, one of which was carried by Lieut. S. L. Gouverneur of the 4th U. S. Cavalry; a cartridge box of the Revolutionary War and a barrel-shaped canteen made with wooden staves and iron hoops.

Mr. George C. Maynard, curator of the division, continued his studies on the history of the materials comprised in the several branches of the collection under his charge.

Musical instruments.—Mr. Hugo Worch, of Washington, added three antique pianos to his most munificent donation of the previous year. They were all made in Philadelphia, one by Alpheus Babcock for John Klemm, another marked Thomas and John Loud as from London, the third, a John Sellers' instrument the date of which can be placed as early as 1775–78, showing construction antedating any known American make. Mr. Worch also deposited temporarily four other pianos, two made by Charles Albrecht of Philadelphia, another by Loud Brothers of the same place, and the fourth by Muzio Clementi of London. A dulcimer 75 or 80 years old was lent by Mr. S. A. Thomas, of Washington.

Ceramics.—To the exhibition series in the ceramic gallery were added a collection of porcelain and glassware presented by Miss Janet Martin, of Worcester, Mass., and examples of American pottery from the following makers: The Newcomb Pottery, New Orleans, La.; Paul Revere Pottery, Boston, Mass.; Adelaide Alsop Robineau, New York; Bertha Heise, South Pasadena, Cal.; The Tile Shop, Berkeley, Cal.; and the Arequipa Pottery Co., Fairfax, Cal. A number of pieces of Chinese porcelain, bronze and brass were received as a loan from Miss Eliza R. Scidmore.

Graphic arts.—An accession of much interest consisted of experimental apparatus and pictures illustrating progress and the several steps in the electrical transmission of photographs from one place to another, and the development of the engraving machine called the akrograph, presented by Mr. N. S. Amstutz, of Valparaiso, Ind. Other gifts included a Wells' printing press from the American Type Founders Co., of Jersey City, N. J.; examples of the art of overlay in printing, from Mr. Reuel Beach, of the University Press, Cambridge, Mass.; and samples of poster stamps and lithographs, from Mr. Carl Butman, of the Smithsonian Institution. A number of 14th and 15th century manuscripts and several books belonging to the estate of the late W. S. Sutton were purchased. Among the loans were a series of Chinese paintings on pith and paper, from Mrs. Charles D. Walcott; and an old Papal Bull issued by Pope Pius III in 1538, from Mr. W. E. Safford, of Washington.

The more noteworthy gifts to the section of photography were a series of photographic prints of astronomical subjects, made at and presented by the Yerkes Observatory, Williams Bay, Wis.; a collection of daguerreotypes, ambrotypes, and tintypes, from Mr. S. C. Hoover, of Takoma Park, D. C.; the original model of the McCurdy developing machine, patented August 26, 1902, from Mr. Horace A. Dodge, of Washington; and a sepia print of a painting on carved wood by Rosselimo, from Dr. Charles D. Walcott.

History.—The historical collections were especially favored during last year, and it is noted with satisfaction that in the aggregate the

permanent acquisitions were fully as extensive and valuable as the loans.

Through the courtesy of Mr. Walter G. Peter, of Georgetown, D. C., the already important exhibition of Washington memorials was greatly enriched by the deposit of many objects of artistic and domestic interest once the property of Gen. and Mrs. Washington at Mount Vernon. Among these may be mentioned a china portrait plaque of Washington designed by Richard Champion, a water-color portrait of him by William Thornton, a set of ivory chessmen of which he made use, and two gold lockets containing locks of his hair; a gold watch which belonged to Mrs. Washington, the cover engraved with the Washington coat-of-arms; letters written to her on the occasion of Washington's death by George Washington Lafayette, Alexander Hamilton, Henry Knox and other persons of note, and a scrap book of original documents relating to the settlement of her estate; a ladder-back chair from Mount Vernon, and a plan of the grounds at Mount Vernon made by Samuel Vaughan in 1787; a child's French dressing table of exquisite workmanship presented by Lafayette to the granddaughter of Mrs. Washington, Martha Custis, who became Mrs. Thomas Peter; a china bowl decorated with the insignia of the Society of the Cincinnati, and a number of fine examples of 18th century china and glassware. This loan comprises part of a large collection of Washington relics which belonged to the late Mrs. Britannia W. Peter Kennon, of Georgetown, D. C., who was the daughter of Mrs. Thomas Peter and the grandmother of Mr. Walter G. Peter.

To Mr. Edward Trenchard, of Washington, the Museum was indebted for the loan of a number of important relics of Capt. Edward Trenchard, U. S. Navy (1784–1824), and Rear Admiral Stephen Decatur Trenchard, U. S. Navy (1818–1883). Pertaining to the former were a midshipman's dirk with ivory handle and gold-mounted scabbard awarded him by act of Congress for his participation in the attack on Tripoli in 1804; a sword and scabbard presented under an act of Congress in recognition of his services during the War of 1812; his commission as lieutenant, dated February 18, 1807, signed by President Jefferson, and his commission as captain, dated March 5, 1817, signed by President Monroe; his manuscript journal when in command of the U. S. S. *Cyane*, 1820–21, during a cruise to the west coast of Africa for the suppression of the slave trade; a water-color chart of Praya Bay, Cape Verde Islands, made by him in 1821; and a gold watch fob set with topaz seal. Belonging to Stephen Decatur Trenchard were his commission as commander, dated February 21, 1863, signed by President Lincoln, and that as rear admiral, dated December 15, 1875, signed by President Grant; his manuscript journal when flag lieutenant to Flag Officer Josiah

Tattnall in command of the United States fleet in Asiatic waters, 1857–60; and a gold chronometer presented by the underwriters of the British barque *Adieu* in recognition of his services in saving that vessel from disaster in 1856.

It is extremely gratifying to announce the gift to the Museum of the large and valuable collection of memorials of Gen. William Tecumseh Sherman, U. S. Army, which has for some years been on exhibition as a loan, together with a few additions. For this generous donation the public is under obligations to Mr. P. Tecumseh Sherman, of New York, son of Gen. Sherman. Briefly summarized, this collection consists of Sherman's diploma as a graduate of the United States Military Academy at West Point in 1840; his commissions from 1840 to 1869, representing the various ranks he held from second lieutenant to general; the service sword and scabbard carried during the battle of Shiloh, April 6–8, 1862; a gold-mounted and jeweled sword and scabbard presented to him in recognition of his services during that engagement; four uniform coats, and parts of a number of other uniforms worn by him, including hats, epaulets, belts, sashes and shoulder straps, a gold watch and chain carried during the Civil War, and a number of miscellaneous articles.

Through the kind favor of members of his family, resident in Washington, the Museum was placed in permanent possession of an extensive series of objects constituting a significant reminder of the distinguished career of the late Maj. Gen. Henry Ware Lawton, U. S. Volunteers. Contributed by Mrs. Mary C. Lawton were a sword and scabbard presented to Gen. Lawton in 1865, when lieutenant colonel, by the officers and men of his regiment, the Thirtieth Indiana Volunteers, as a token of confidence and respect; a uniform belt, sash, and three service swords used during the Civil War; a pair of aiguillettes, a pair of shoulder knots and a chapeau worn in 1889 when lieutenant colonel and inspector general, United States Army; the flag of the Eighth United States Army Corps flown at his headquarters in the Philippines during the insurrection of 1899, a manuscript decree signed by Aguinaldo, two Filipino flags captured by Gen. Lawton, and a number of resolutions of regret upon his death, notably those adopted by the municipal authorities of Imus, Bacoor, Las Pinas, Paranaque, Santa Ana, San Felipe, Nery and San Pedro Macati, and the Common Council of the City of Boston. Presented by Mr. Manley Lawton were a medal of honor awarded to Gen. Lawton by Congress when lieutenant colonel and inspector general, United States Army, for distinguished gallantry in battle at Atlanta, Ga., August 3, 1864; an ivory memorandum pad used during the Civil War; and a gold watch and chain presented to him in 1886 by the cattlemen of central New Mexico in recognition of his services when captain in the Fourth United States Cavalry, in connection with the

capture of the Indian chief Geronimo. From Miss Catherine Lawton was received a glass punch set of fifteen pieces decorated with gold and floral designs, presented to Gen. Lawton in the Philippines in 1899.

Other noteworthy gifts were the following: From Mr. and Mrs. Ethan Allen Weaver, of Germantown, Pa., a wooden canteen, leather bullet pouch, two powder horns and a British revenue stamp of the period of the Revolution. From Mrs. Caroline E. Bates, of Washington, a number of relics, including a pair of leather saddle bags, leather cartridge case, blue canvas knapsack, and an oak cane, with ivory handle of interesting workmanship, all of the early part of the 19th century. From Miss E. Reynolds, of Washington, a uniform coat worn by Maj. Gen. John F. Reynolds, U. S. Volunteers, in 1841, when a cadet at the United States Military Academy at West Point, and a pair of epaulets worn by him in 1855, when a captain in the Third United States Artillery. From Miss F. M. Crosthwaite, of Washington, a uniform coat worn during the War with Mexico, 1846–48, by Lieut. Baldwin J. Crosswait, Third Ohio Infantry. From Mr. Nathan Perry Beers, a rocking-chair owned by Henry Clay, and a silk banner carried on the occasion of his funeral in 1852. From Mr. Mark Burckle Hatch, a silver tray, pitcher and four goblets, presented to Bvt. Maj. Gen. John Porter Hatch, U. S. Volunteers, by the citizens of Oswego, N. Y., in recognition of services during the War with Mexico, the Indian expeditions of 1857–59 and the Civil War; a sword presented for services during the Civil War, and a uniform coat worn when lieutenant during the War with Mexico. From Rear Admiral John C. Watson, U. S. Navy, the boat flag flown on the gig in which Commander Charles S. Boggs, U. S. Navy, left the gunboat *Varuna* commanded by him when that vessel was sunk below New Orleans, April 24, 1862, during the engagement between a Confederate flotilla and the United States fleet commanded by Flag Officer David G. Farragut. From Mrs. Bridget O'Farrell, of Washington, a maple armchair used by Gen. Robert E. Lee at Appomattox, Va., April 9, 1865, when writing the note accepting the terms proposed by Gen. Grant for the surrender of the Army of Northern Virginia, and a number of letters and other papers relating to the history of the chair. From Maj. John Bigelow, U. S. Army, a chapeau, coat, pair of trousers, knee breeches, two vests and a dress sword and scabbard, belonging to the official costume worn by John Bigelow at the court of Napoleon III, when American minister to France, 1865–66.

From the Misses Long, of Washington, whose generous contributions have so often been recorded in these reports, there were received as a loan a drawing-room table with pedestal of mahogany and top of marble, two drawing-room chairs, two brass candelabra and mis-

cellaneous objects of the early part of the 19th century, constituting an initial installation of period furniture of the late 18th and early 19th centuries, in line with other period collections of the Misses Long, all intended to illustrate typical furnishings, arts and industries of an American home of that time. Two other loans should also be mentioned. One, from Mrs. D. F. Culler, of Strasburg, Va., includes two gold watches of the early part of the 19th century, one of which was owned during the War of 1812, by Lieut. Col. William Henry Beatty of the Virginia Militia, a collection of costumes and accessories of the period of the Civil War and a number of miscellaneous relics. The other, from Lieut. Rufus King, U. S. Navy, consists of a gold-mounted and jeweled sword with scabbard, presented by the Nineteenth Indiana Volunteers to Brig. Gen. Rufus King, U. S. Volunteers, in 1862, and a rapier and scabbard belonging to him previous to the Civil War.

The National Society of the Colonial Dames of America made some notable additions to their large and interesting loan collection, among which may be mentioned miniature portraits of William Sharp, Capt. Charles Nixon of the Delaware Militia, James Young, Mrs. Miles King and Miss Fannie McCausland, all painted during the latter part of the 18th century; a silver urn and spoon made by Paul Revere; two silver wine coolers, and a number of other pieces of silverware, chinaware and miscellaneous objects of the same period; a sword and scabbard belonging to Col. Robert Dodge of the Massachusetts Militia during the War of the Revolution; a silver goblet made of the mace used in the Virginia House of Burgesses; two silver tumblers which had been the property of George Washington; a fan, gold necklace, pair of earrings and beaded purse belonging to Martha Washington; a coral necklace, and a pair of earrings owned by Nellie Custis; oil portraits of Oliver Wolcott, Joachim Murat, a French colonial officer, and Queen Elizabeth of England; five water-color sketches of historic houses in the city of New Orleans, and several documents relating to the history of the territory of Louisiana prior to its sale to the United States in 1804. To the loan collection of the National Society of the Daughters of the American Revolution were added a set of dolls' china of 36 pieces and 5 pieces of dolls' furniture which had belonged to one of the children of Richard Rush, American minister to Great Britain, 1817–25, and also several miscellaneous relics.

The portrait collection received an oil painting of Salmon P. Chase by Miss Caroline L. O. Ransom, a gift from the estate of Miss Irene Ransom; a portrait of Columbus painted by Sir Antonio Moro, about 1545, lent by Mr. C. F. Gunther, of Chicago, Ill.; and 345 engraved and half-tone portraits of distinguished men, deposited by Dr. Marcus Benjamin, of the National Museum.

The Wilde Gold Medal of the Manchester, England, Literary and Philosophical Society awarded to Frank Wigglesworth Clarke, of the Geological Survey, on the occasion of the Dalton Centenary, 1903, was lent for exhibition by Prof. Clarke. The following were received as gifts, namely, a silver medal designed by Georges Lemaire in 1910, commemorating the Franco-Prussian War, 1870–71, from Mr. George Iles, of New York; 4 bronze replicas of the Anthony N. Brady Memorial Medal awarded annually by the American Museum of Safety to the American electric railway company which for the year of the award has done most to conserve the safety and health of the public and its employees, from the American Museum of Safety, through Dr. William H. Tolman, of New York, director; and a bronze replica of the medal commemorating the services of Samuel Putnam Avery to the fine arts and his gift of the Avery Library Building to Columbia University, from the Samuel Putnam Avery Medal Commission, through its chairman, George F. Kunz, of New York. The Smithsonian Institution placed on deposit a bronze medal issued by the Holland Society of New York commemorating the three hundredth anniversary of the Dutch settlement on Manhattan in 1613, and the two hundred and fiftieth anniversary of the founding of the Board of Aldermen, 1665; and two bronze medals of award, with diplomas, representing, respectively, a grand prize and a silver medal, conferred upon the Institution by the Jury of Awards of the Panama-Pacific International Exposition, San Francisco, 1915.

Twenty-five Egyptian silver coins struck during the first century B. C., were obtained in exchange from the Minnesota Academy of Sciences; while 53 modern coins of the United States, Great Britain, France, Spain and Mexico, and one United States token, were presented by Miss Harriet N. Langdon, of Cincinnati, Ohio; and 86 modern and 254 antique copper, brass and bronze Chinese coins were received as a gift from N. Gist Gee, of Soochow, China.

The collection of postage stamps, stamped envelopes and post cards was increased to the extent of 3,460 specimens, of which the Post Office Department deposited 1,565 examples of new foreign issues received from the International Bureau of the Universal Postal Union, and 269 specimens of new domestic issues. Of special interest among the latter were a series of the current United States issues perforated 10, and an imperforate sheet of 150 two cent stamps made from the new cylindrical plates for endwise coils recently installed in the Bureau of Engraving and Printing. The additional 1,626 specimens were obtained by gift, purchase and exchange to fill specific gaps in the collection.

By the death of Mr. David W. Cromwell, of New York, on September 11, 1915, the splendid collection of nearly 20,000 domestic and foreign stamps, which he placed on permanent deposit in 1908,

became the absolute property of the Museum. It is notably rich in fine examples of foreign issues of the 19th and 20th centuries, and its acquisition marks a considerable advance toward rounding out the Museum collection.

The arrangement of the smaller objects stored in trays on the history gallery in alphabetical order by donor and lender, in accordance with the plan outlined in the last report, was completed and greatly simplifies the task of locating particular specimens when desired. The larger objects provisionally kept in the basement of the Smithsonian building have also been appropriately classified and made readily accessible. Fair progress was reported in the preparation of a subject catalogue of the material in the division, and lists of all the objects which might be classed under single heads regardless of their origin were begun. Such a catalogue will prove of great importance and the classified lists of material may ultimately be made the basis of a published catalogue of the entire collection, for which many requests have been received. The catalogue of the Washington relics by the assistant curator, Mr. T. T. Belote, mentioned in previous reports, was completed and published.

Historical costumes.—Under the direction and with the constant attention of Mrs. Julian James and Mrs. R. G. Hoes, of Washington, the collection of historical costumes was greatly enlarged, the additions numbering 562 articles comprised in 61 accessions, nearly all of which were loans, and the installations in the exhibition hall were greatly improved. Four figures were added to the group of White House hostesses, Mrs. James Monroe, Mrs. John Quincy Adams, Mrs. Abraham Lincoln and Mrs. James R. McKee, while the costume of Mrs. Rutherford B. Hayes was changed for another and much more satisfactory one. The more important acquisitions, all loans unless otherwise stated, were as follows: A pair of riding boots of Thomas Jefferson was contributed by Mr. Wilson Cary Nicholas Randolph, jr., of Lynchburg, Va. From Mrs. Louisa Catherine Adams Clement, of Newburyport, Mass., were received a white satin dress covered with white net and trimmed with silver, a pair of slippers and a handkerchief of Mrs. John Quincy Adams, a handkerchief of John Quincy Adams and one of John Adams; and from Mr. Richard Cranch Greenleaf, of Lawrence, N. Y., a silk coat of John Adams, and a brooch set with pearls containing locks of the hair of Mr. and Mrs. John Adams and John Quincy Adams. Mrs. Charles W. Richardson, of Washington, deposited a small gold locket in the shape of a padlock, containing a lock of the hair of Andrew Jackson; while Miss M. S. Lathrop, of Lebanon, N. H., presented a gold locket which had belonged to Miss Abigail Fillmore, daughter of Millard Fillmore, containing her portrait and locks of hair of her father and herself. A purple velvet dress and waist, and a fan and

parasol of Mrs. Abraham Lincoln were lent by Mrs. Julian James; and a white satin dress elaborately trimmed with rosettes, lace and pearls, worn by Mrs. Rutherford B. Hayes during her husband's administration, was received from Col. Webb C. Hayes, of Spiegel Grove, Fremont, Ohio. Accompanying the latter were a handkerchief of Mrs. Hayes, and a framed photograph of her protrait by Huntington in the White House. As a loan from Mrs. James R. McKee, of New York, daughter of Benjamin Harrison, were obtained the dress of white brocaded satin and old-gold silk, trimmed with beads, white kid gloves and gilded kid shoes, worn by her at the inaugural ball in honor of her father, March 4, 1889, together with the fan and handkerchief carried on that occasion.

Noteworthy among the other accessions were a piece of point d'Argentan lace from a collar which belonged to the Empress Eugenie, of France, presented by Mrs. Stephen O. Richey, of Washington; a dress of pale blue silk with raised velvet flowers worn in 1883 by Mrs. Sheridan, wife of Gen. Philip H. Sheridan, then commander-in-chief of the United States Army, lent by Mrs. Sheridan; two lilac brocaded silk dresses of the late Mrs. Hay, wife of John Hay, Secretary of State from 1898 to 1905, lent by Mrs. R. G. Hoes, of Washington; a doll owned by Mary Norton Haworth of Philadelphia which was dressed in mourning for Gen. Washington in 1799, another which belonged to Mary Norton Jenkins of Hudson, N. Y., in 1831, a paper fan with ivory sticks, one of a number of similar design presented as souvenirs to the ladies who attended the ball given in Philadelphia in 1824 in honor of Lafayette, and several articles of wearing apparel of the early part of the 19th century deposited by Mrs. Mary Norton Lower, of Washington; a collection of dolls and dolls' accessories once owned by Miss Ella Slade of Middlebury, Vt., granddaughter of William Slade, governor of Vermont, 1844–46, the gift of Mrs. Burton Thompson, of New York, and Mrs. C. Hill, of Middlebury, Vt.; and several dolls with apparel, lent by Mrs. Allan McLane, of Washington.

Six very handsome brocaded silk dresses and three pieces of brocaded silk of the latter part of the 19th century, which belonged to the Misses Sophia and Clementina Furniss and Mrs. Margaret E. Zimmerman, of New York, were presented by Mrs. Zimmerman. The extensive and varied collection of bonnets of the 19th century, previously on deposit, was made a permanent contribution by Mrs. Henry Kirk Porter, of Washington. From Miss Edythe Tillinghast, of New York, through Mrs. William E. Fendall, of Washington, a large number of laces, including a wedding veil, handkerchiefs, capes, shawls and collars, and many pieces of jewelry, comprising watches, earrings, brooches, bracelets and other objects, were received as a loan.

Art textiles.—No important additions were made to the collection of laces and other art textiles, but the hall in which these beautiful articles are exhibited continued to be one of the most attractive to visitors, the excellent rearrangement of the materials completed by the committee of ladies near the close of the previous year having greatly increased their effectiveness. It is unfortunate that so small a part of this collection is the property of the Museum in view of its very great educational value, but it is hoped that the interest which the ladies have taken in bringing it to its present status will result in measures to insure its permanence.

Exhibition collections.—The exhibition collections in practically all branches of the department of anthropology were more or less extended and improved. The ethnological exhibit in specimen cases may now be said to have assumed its permanent form. The family group of the Igorot of the Philippines was enlarged and completed, while the group of Kiowa children is expected to be finished during the current year. Several sub-family groups were transferred to standard cases, and two cases were installed, respectively, with European peasant costumes and Ute Indian ethnologica. The basketry series displaced from the north hall alcove was arranged in alcoves in the adjacent range.

A number of new specimens of American archeology and many selected from the reserve collections were added to the various type series already exhibited, and a group illustrating the aboriginal stone workers of Mexico was placed on display. The following sections in the exhibition of Old World archeology have been definitely installed, namely, the Belgian, Swiss Lake-dwellings, Egyptian and Palestinian, Italian, Central Asian, Russian, ancient coins, and Egyptian and Italian historic antiquities, and also a model of Stonehenge, the famous megalithic monument of Salisbury Plain, England. In physical anthropology there are now, besides those in the laboratory, 15 cases of exhibits in the hallway on the third floor, and a number of additional ones can readily be filled with very interesting material when floor space becomes available.

In September the temporary partition dividing the south-east range in the older building was removed, and the entire space, assigned to the division of mechanical technology, is being utilized for relieving the congestion in other halls. A new installation was made of the collection illustrating the long distance telephone service to include the transcontinental line from New York to San Francisco and other additions of the year. The completion of the alterations in the main hall of the Smithsonian building and of the new arrangement of cases in the connecting range rendered possible the reclassification and reinstallation of the greater part of the exhibits in graphic arts.

Owing to the large demands on the accommodations furnished by the halls devoted to American history by reason of the extent of recent accessions, the chronological classification of cases and their contents was somewhat disturbed, and the rearrangement of a number of cases was made necessary. The Jamestown cases on the south side of the west-north range, formerly containing the Cromwell stamp collection, were replaced with 13 upright floor cases of the door screen type, which are particularly adapted to certain purposes. Four of these were used for the Dickins collection of Anglo-American pottery which is now admirably displayed in chronological order; two for the Homer N. Lockwood collection of walking-sticks; one for swords; four for objects belonging to the Copp collection of miscellaneous household articles illustrating the period from 1750 to 1850; and three for the Gustavus Vasa Fox collection. Seven new wall cases in the same hall contain, respectively, the United States Army Corps flag and documentary relics of the recently received Lawton collection; the Paul Jones flag, cutlass and musket; the diplomatic costume worn by John Bigelow at the court of Napoleon III; the diplomatic costume of Sidney Mason in 1829; the flag used on the gig of the U. S. gunboat *Varuna* during the Civil War; and a miscellaneous series of objects.

Four new flat-top cases in the northwest court are designed for the ancient Greek and Roman coins and the electrotypes of coins described in the last report. This will complete the installation of the present Museum collection of coins and medals which represents nearly all of the countries of the world and comprises 7,954 specimens. The installation of the postage stamp collection was also finished to the extent of the specimens available for that purpose, which number 38,394. There still remains the task of providing printed labels indicating the source of individual specimens and of preparing a catalogue of the series. The large collection of foreign stamped envelopes and post cards has not yet been worked up, but it would undoubtedly be of great interest to the public could space be found for its exhibition.

Explorations.—Several field investigations conducted during the year by members of the staff were productive of important results and furnished a considerable amount of new material for the collections of the department. The head curator, Mr. William H. Holmes, joined, by invitation, the expedition of the Carnegie Institution of Washington to Central America under the direction of Mr. Sylvanus G. Morley, on which he was absent during a part of February and March. Four of the sites of ancient Maya cities were visited, Quirigua, Guatemala City and Antigua in Guatemala, and Copan in Honduras, studies of particular interest being made at Quirigua and Copan.

Dr. Walter Hough, curator of ethnology, spent 15 days in June exploring ruins at Luna in western central New Mexico. The principal examinations were in a ruin of which the superficial evidences had become obliterated. It was found upon excavation to be that of an extensive village of semi-subterranean circular pit houses, covering about 40 acres. The houses were constructed by digging in the earth to a depth of about 5 feet, erecting posts around the edge of the opening and covering the whole with a roof construction of timbers, brush and earth. There were also mealing and cooking houses, with clay-covered roofs, built on the surface in proximity to the pits, and in them were discovered numerous rude stone implements and crude pottery. A cemetery in which the burials were of infants was unearthed. The arts and industries of the inhabitants of this village were limited and crude, and not much material could be collected. The ruin appears to be very ancient as the surface is completely smoothed over and a foot of bark soil covers the houses. Other ruins of a different character were seen some miles from Luna. At one of these a deeply sunk walled kiva with graded way into it was found to be 54 feet square. On the wall grew a matured pine 8 feet 2 inches in circumference at 6 feet from the ground.

Dr. Aleš Hrdlička, curator of physical anthropology, was granted three months' leave of absence to take up, for the Department of Justice, the anthropological examination of about 800 Chippewa Indians for the purpose of determining which should be classed as full-bloods. In order to fully prepare himself for this work, he was permitted to spend a month among the Sioux Indians of North and South Dakota, and among such of the Chippewa as it seemed especially important to visit beforehand. These preliminary observations, which occupied the month of April, proved to be of great interest and value, and when the actual work of determining the blood status of the Chippewa was begun, results were reached with promptness and certainty. In all approximately 1,200 Indians of all ages were examined, and on 696 of these detailed reports and determinations were furnished, which were regarded as highly satisfactory by the Department. This undertaking was an important practical application of anthropology, and the records are also available for scientific purposes. They make it possible to thoroughly establish the physical characteristics of the Sioux people, and to put on record the present racial status of the Chippewa. The latter people, historically important and still very numerous, will before long be composed entirely of mixed bloods, and had it not been for these examinations, the necessity of which was appreciated by the Indians themselves, the opportunity of studying these tribes from the physical standpoint would probably have been lost forever. The trip likewise resulted in the acquisition of over

200 photographs of the remaining full-bloods among the Chippewa, illustrating them and their mode of life.

Other trips by Dr. Hrdlička in connection with the work of his division were one, under the auspices of the Bureau of American Ethnology, in November, to Buffalo and New York for the purpose of studying the collections of crania in the museum of the Buffalo Society of Natural History and the American Museum of Natural History; and two to Ellis Island, for the Bureau of the Public Health Service, for instructing several of the surgeons at the Island in anthropometry.

During June, 1916, Mr. Neil M. Judd, aid in the division of ethnology, was under detail to the Bureau of American Ethnology, continuing certain archeological investigations begun in western Utah during the previous year. The preliminary observations had disclosed the necessity for extending the northern limits of the area generally recognized as the ancestral home of the Pueblo Indians. The excavations of this year confirmed these findings and established, with a greater degree of certainty, the close cultural relationship existing between the inhabitants of the adobe dwellings in western Utah and the house-building peoples of other sections of the Southwest.

DEPARTMENT OF BIOLOGY.

The additions to the zoological and botanical collections during last year were both extensive and important. In accessions of a mixed character, Asia was especially well represented, the material consisting mainly of mammals, birds, reptiles and batrachians, with many genera and species new to the Museum. The name of Dr. W. L. Abbott remains conspicuous in this connection, through a large collection from Celebes made under his direction and at his expense by Mr. H. C. Raven, and an extremely interesting, though somewhat smaller, donation from upper Siam, made in conjunction with Mr. C. B. Kloss. Particular significance attaches to both of these contributions, as coming from new localities adjacent to regions from which rich material has been accumulating for some years, chiefly through the efforts of Dr. Abbott in the Malay peninsula and archipelago, Borneo, etc., and of Dr. E. A. Mearns in the Philippines. Mr. Arthur de C. Sowerby continued his sendings, which represented field work in Manchuria and northern China; while Mr. Copley Amory, jr., presented an extensive and varied collection secured by him on the expedition of the schooner *Eagle* to the region of the Kolyma River, northeastern Siberia. Composed chiefly of mammals and birds, though including specimens of fishes, plants, and other groups, this Siberian material furnishes an important basis for comparison with the fauna of Alaska on the one hand and of Europe on the other.

The Carnegie Institution of Washington deposited a very large number of invertebrates, with some vertebrates, from the West Indian region, and a vast quantity of botanical material from South America. The Bureau of Fisheries transferred many thousands of marine invertebrates and fishes from various regions, besides numerous mammals and birds from Alaska and reptiles from other localities; and from the Biological Survey many valuable specimens were received.

Mammals.—In the Asiatic collections before mentioned mammals were represented to the extent of 465 specimens from Celebes, 197 specimens from upper Siam, 365 specimens from the Kolyma River region and 108 specimens from Manchuria and northern China, in addition to which Dr. Abbott presented 183 specimens from Kashmir, British India. The material from Siam, which had already been worked up and described by Mr. Kloss, contains a dozen or more forms not hitherto represented in the Museum; while the Chinese collection from Mr. Sowerby includes an example of a race of takin new to the Museum. By exchange with the McMahon Museum at Quetta, Baluchistan, 25 specimens were obtained which also add several forms. Twenty-three large mammals from East Africa, the gift of Mr. Elton Clark, are a welcome contribution from a region just to the west and south of that visited by the Smithsonian African Expedition. A skin and skull of *Mallomys*, a rare rodent from New Guinea, and three sea-leopards, a peculiar species of seal, from the Antarctic Ocean, supplying generic gaps in the collection, were purchased, as were 4 skins and skulls of the Spanish ibex from Sierra Nevada, southern Spain.

Many large skins, recently received, were in process of tanning, several hundred medium-sized skins were prepared for the reserve collection, and several thousand skulls and skeletons were cleaned and made ready for study purposes. The arrangement of the skeletons and skulls of large mammals in the attic storage was retarded by the present lack of sufficient case room, though provision was found for a part of the African antelopes, the first of the Bovidae to be appropriately cared for. The rearrangement and card-cataloguing of the alcoholic collection was continued.

The curator of the division, Mr. Gerrit S. Miller, jr., made considerable progress on a monograph of the American bats of the genus *Myotis*, and, in conjunction with Mr. J. W. Gidley, on a rearrangement of the rodents, including all known fossil as well as recent members of the group. The critical study of certain recent and fossil great apes and Hominidae, alluded to in the last report, was brought to a conclusion and published in the Smithsonian Miscellaneous Collections under the title "The jaw of the Piltdown Man." Mr. N. Hollister, the assistant curator, concentrated attention on the

mammals of the Smithsonian African Expedition and those from Mr. Paul Rainey, practically completing work on the Insectivora, Chiroptera, and Carnivora, and about half finishing with the Rodentia. Dr. C. Hart Merriam, associate in zoology, has his manuscript on the bears of North America nearly ready for the press, while Dr. M. W. Lyon, jr., continued his studies of Sumatran mammals.

The members of the Biological Survey and Dr. O. P. Hay, of the Carnegie Institution of Washington, made constant use of the collections, which were also consulted by several other naturalists. Dr. J. A. Allen, Dr. W. K. Gregory, and Mr. H. E. Anthony, of the American Museum of Natural History, examined, respectively, South American mammals, skulls of primates, and miscellaneous forms in connection with remains from cave deposits in Porto Rico. Mr. Edmund Heller had the facilities of the division for determining the mammals of the Peruvian Expedition of 1914–15, of which he was naturalist; and Dr. E. H. Sellards, State Geologist of Florida, brought fossil forms from his State for comparison with recent ones. Dr. Joseph Grinnell, of the Museum of Vertebrate Zoology of the University of California, studied minks, fishers, and other carnivores, and Mrs. Hilda Wood Grinnell, American bats. Mr. G. F. Ferris, of Leland Stanford Junior University, made a systematic search of the mammal collection for parasites attached to the fur, and Mr. Louis Agassiz Fuertes, of Ithaca, N. Y., spent a short time making paintings of North American mammals. Specimens were lent for study to Dr. J. A. Allen and Mr. H. E. Anthony; Dr. G. M. Allen, of the Museum of Comparative Zoölogy; and Dr. K. Andersen, of the British Museum of Natural History.

Birds.—The birds sent from Celebes by Mr. Raven, amounting to no less than 869 well-prepared and labeled specimens, formed a notable acquisition. One genus, *Ceycopsis* (a kingfisher), and 10 species and subspecies are new to the Museum, and other desiderata will probably be found when the material has been fully studied. The Siamese collection from Mr. Kloss, comprising 133 specimens, contributes a genus, *Anthocincla* (a pitta), and 8 species previously unrepresented. The Siberian contribution from Mr. Copley Amory, jr., consists of 243 skins, 5 nests and 30 eggs, and supplies at least 10 subspecies hitherto lacking in the collection; while the accession of Chinese birds from Mr. Sowerby is noteworthy as adding 2 genera (*Hypopicus*, a woodpecker, and *Herbivocula*, a warbler) and 6 species and subspecies, including 2 pheasants. A dozen other additional forms were contained in a collection from eastern Argentina, obtained in exchange from Dr. Carlos S. Reed, director of the Educational Museum of Mendoza.

Among other accessions may be mentioned a single specimen of the brambling, *Fringilla montifringilla*, an Old World finch of a genus and species hitherto not reported from America, taken on St. Paul Island, Bering Sea, and contained in a small, interesting collection deposited by the Bureau of Fisheries; a rare species of heron, *Pilherodius pileatus*, from Panama, presented by Mr. James Zetek; and a Korean robin, *Icoturus komadori*, contributed by Mr. Harold C. Bryant, of the University of California. To Mr. Edward J. Brown, of Los Angeles, Cal., the division was indebted for the gift of 261 skins of water birds and waders, forms difficult to preserve, prepared with such care as to add greatly to their value as museum study specimens.

The rearrangement of the extensive collection of skins in the reserve series, as revised accommodations are provided, included a continuation of the specimens of ducks as well as of the larger species of the family Corvidae, such as the ravens, crows, etc. The marking with new standard labels of the several thousand skins collected and presented by Dr. W. L. Abbott, begun some years ago, was nearly completed. The collection of skeletons, to which large additions are being made, is becoming uncomfortably crowded, owing to the lack of sufficient storage facilities. The specimens received during the year were, for the most part, verified, labeled and arranged, Dr. Richmond being greatly helped in this matter by Mr. Alex. Wetmore, of the Biological Survey.

Mr. Robert Ridgway, curator of the division, continued the preparation of manuscript for Part 8 of Bulletin 50, the Birds of North and Middle America, which he expects to finish before the expiration of the present year. It will cover the Charadriiformes, which include the shore birds, gulls and auks, and their nearer allies. Volume 7 of this series was issued near the close of the year. Dr. Charles W. Richmond, assistant curator, devoted what little time could be spared from routine and administrative duties to bibliographic and nomenclatorial work, partly for Bulletin 50, and partly for a third supplement to Waterhouse's "Index generum Avium" covering the years 1906–15, which was nearly finished. Mr. J. H. Riley, aid, besides assisting Mr. Ridgway, studied the Chinese collection of birds from Mr. Sowerby, helped in compiling a list of Manchurian birds and prepared a bibliography of the latter for this naturalist. Dr. E. A. Mearns, U. S. Army (retired), associate in zoology, continued the preparation of his report on the East African birds, and also gave attention to the pelicans, the least terns and some Philippine birds. Dr. W. L. Abbott, associate in zoology, examined the birds from San Domingo, preparatory to a collecting trip to that Island. Mr. A. C. Bent, of Taunton, Mass., made considerable progress on his life histories of North American birds, and spent some

time in the division studying the eggs and downy young of North American water birds. The collections were, as usual, frequently consulted by members of the Biological Survey, and especially by Dr. H. C. Oberholser, who was present almost daily, not only in connection with his official work, but in continuation of his studies of the Museum series of Malayan birds and of the osteology of certain groups. Mr. Alex. Wetmore examined both skeletons and alcoholic specimens, and began the determination of a collection of birds from Polynesia. The late Prof. W. W. Cooke, also of the Biological Survey, made use of the collection for data relating to the migrations of birds.

Among a large number of ornithologists from this country and abroad who made studies in the division for varying periods during the year, may be mentioned Dr. Hector Ambrosetti, of Buenos Aires, Argentina; Mr. José C. Zeledón, of San José, Costa Rica; Mr. H. H. Bailey, of Newport News, Va.; Mr. S. B. Buckner, jr., of Mumfordville, Ky.; Dr. Frank M. Chapman, of the American Museum of Natural History; Dr. Joseph Grinnell, of the University of California; Mr. Wharton Huber, of Gwynedd Valley, Pa.; Mr. R. Warren Kimsey, of Lathrop, Mo.; Mr. F. C. Lincoln, of Denver, Colo.; Mr. W. H. Osgood, of the Field Museum of Natural History; Mr. Edward Palmer, of New London, Conn.; Mr. J. L. Peters, of Harvard University; Mr. William S. Sparks, of Cumberland, Md.; Mr. Harold G. Spink, of Hastings, Fla.; Mr. B. H. Swales, of Grosse Ile, Mich.; Mr. W. E. Clyde Todd, of the Carnegie Museum; Lieut. Townsend Whelan, U. S. Army; and Dr. R. W. Shufeldt, and Mr. Francis M. Weston, jr., of Washington. The collection of eggs was consulted by Mr. Edward Arnold, of Montreal, Canada; Mr. Edward J. Court, Mr. Edwin B. Hunt and Mr. Irvin N. Hoffman, of Washington; Dr. Luther, of Fayetteville, Ark.; Mr. Donald J. Nicholson, of Orlando, Fla.; and Mr. J. Parker Norris, jr., of Philadelphia.

Specimens were lent for study to Mr. W. E. Clyde Todd; Dr. Joseph Grinnell; Mr. S. N. Rhoads, of the Academy of Natural Sciences, Philadelphia; Dr. F. M. Chapman, Mr. George K. Cherrie and Mr. J. P. Chapin, of the American Museum of Natural History; Mr. C. B. Cory, of the Field Museum of Natural History; Mr. A. C. Bent, of Taunton, Mass.; Dr. Louis B. Bishop, of New Haven, Conn.; Mr. J. H. Fleming, of Toronto, Canada; Mr. Loye H. Miller, of the California State Normal School, and Mr. Harry S. Swarth, of the Museum of History, Science and Art, Los Angeles, Cal.; Mr. R. C. Murphy, of the Brooklyn Institute of Arts and Sciences; Mr. E. R. Warren, of Colorado Springs, Colo.; Dr. S. W. Mellott, of Chevy Chase, Md.; and Dr. R. W. Shufeldt and Mr. Frank Bond, of Washington.

Reptiles and batrachians.—The most important accession of the year consisted of material collected in the Panama Canal Zone by Mr. E. A. Goldman, Mr. S. F. Hildebrand and the late Dr. S. E. Meek in connection with the Smithsonian biological survey of the Canal Zone and deposited by the Institution. Though less numerous, the Celebean and Siamese reptiles received from Mr. Raven and Mr. Kloss, respectively, are of more than ordinary value. The material from Siam had already served as the basis of a paper by Malcolm Smith and C. B. Kloss in the Journal of the Natural History Society of Siam. Particular interest attaches to a collection from Rev. L. I. Moffett, of Kiangyin, China, as it contains two specimens of the Chinese alligator, of which the Museum has hitherto had no representatives. It is closely allied to the American species. A small Chinese series from Mr. A. de C. Sowerby adds a species of frog new to the collection, *Rana emeljanovi*.

Work on the monograph of the turtles of North and Middle America by Dr. Leonhard Stejneger, head curator of the department, progressed slowly owing to the limited time he could give to it, but he completed a revision of the amphisbaenian lizards, with very interesting results both systematically and zoogeographically. A paper on this group is in preparation. Among those who consulted the collections were Dr. Thomas Barbour, of the Museum of Comparative Zoölogy, in connection with his work on Cuban herpetology; Miss M. C. Dickerson, curator of herpetology in the American Museum of Natural History, who is preparing a report on the reptiles of the islands in the Gulf of California; Mr. Charles L. Camp, of Berkeley, Cal., who is studying the geographical distribution of California reptiles and amphibians; and Mr. E. R. Dunn, of Haverford College, who examined the salamanders, particularly of the genus *Desmognathus*. Mr. C. W. Gilmore, of the Museum staff, and Dr. O. P. Hay, of the Carnegie Institution of Washington, also made use of the collections in furtherance of their paleontological researches. Specimens were lent for study to Dr. Barbour, Miss Dickerson and Mr. Dunn, and to Dr. E. R. Whitmore, of Washington.

Fishes.—About 18,000 specimens, the result of field work during 1911 and 1912 by Mr. S. F. Hildebrand and the late Dr. S. E. Meek as a feature of the biological survey of the Panama Canal Zone under the auspices of the Smithsonian Institution, constituted the principal acquisition of the year. The conclusions reached from the study of this material are of great importance and are embodied in a report on the fresh-water fishes of the isthmus, recently completed. The Government of Peru presented a valuable collection of fishes made in 1907 and 1908 by Dr. R. E. Coker while in the service of that country, which has served as the basis for an extended paper by Dr. B. W. Evermann and Mr. L. Radcliffe, now in the printer's hand.

Another noteworthy South American collection, admirably supplementing the material from Panama and Peru, was obtained from the Indiana State University in exchange. Some 1,242 specimens collected in various localities by the steamer *Albatross* were received from the Bureau of Fisheries.

Mr. Barton A. Bean, assistant curator, continued the study of the fishes from the *Tomas Barrera* Cuban expedition; he also reported on Chinese specimens from Mr. Arthur de C. Sowerby, and on some Panama specimens submitted by Mr. James Zetek. Mr. S. F. Hildebrand and Mr. L. Radcliffe, of the Bureau of Fisheries, and Prof. C. H. Eigenmann, of Indiana University, had access to the collections for the purpose of making comparisons. Mr. Hildebrand, who found it necessary to consult the South American material of Prof. Eigenmann at Indiana University in the working up of the fresh-water fishes from the Panama Canal Zone, had the latter collection shipped to him at that place, where his report was completed. Specimens were lent to Prof. C. H. Gilbert, of Leland Stanford Junior University, and Mr. John T. Nichols, of the American Museum of Natural History.

Insects.—While there were no especially prominent accessions of insects, several very interesting collections were received. The Bureau of Entomology of the Department of Agriculture deposited 5,000 Lepidoptera, 375 Diptera, and 320 specimens of other groups. A valuable series of 1,900 named beetles from Australia, representing 958 species, was obtained from Mr. A. M. Lea, partly by gift and partly by purchase. Mr. F. J. Dyer, American consul at La Ceiba, Honduras, forwarded numerous specimens from time to time, and Prof. T. D. A. Cockerell, of the University of Colorado, presented 11 types of new species, besides a number of miscellaneous insects. Eighty-seven named species of Australian Hymenoptera were received from the Queensland Museum in exchange.

Some progress was made in transferring Hemiptera to the permanent cabinets, especially specimens in the Uhler collection, but in other orders the work proceeded more slowly owing to the insufficient assistance provided the division.

The scientific activity on the part of the staff connected with the division is indicated in the bibliography. It consisted mainly in the description of new species and to some extent in the systematic revision of smaller or larger groups. A conspicuous piece of work was the monograph on the mosquitoes by Dr. L. O. Howard, curator of the division, Dr. Harrison G. Dyar, custodian of Lepidoptera, and Mr. Frederick Knab, custodian of Diptera, the first part of which, devoted to systematic description, was published by the Carnegie Institution of Washington during the year.

A number of entomologists, in addition to members of the Bureau of Entomology, visited the division for varying periods, but mostly

for a few days only. Among these were Prof. W. T. M. Forbes, of Cornell University; Dr. J. W. Holland, director of the Carnegie Museum; Mr. C. W. Johnson, of the Boston Society of Natural History; Mr. Charles W. Leng and Dr. F. E. Lutz, of the American Museum of Natural History; Mr. William T. Davis, of New Brighton, N. Y.; Mr. A. H. Sturtevant, of New York; Mr. B. Preston Clark and Dr. C. T. Brues, of Boston; Dr. J. H. McDonough, of Decatur, Ill.; and Mr. F. M. Jones, of Wilmington, Del. Specimens were lent for study to Mr. C. P. Alexander, of Cornell University; Mr. E. T. Cresson, jr., of the Academy of Natural Sciences of Philadelphia; Mr. Charles W. Leng and Mr. A. H. Sturtevant; Mr. J. A. Hyslop, of the Entomological Laboratory, Hagerstown, Md.; and Mr. C. R. Jones, of Fort Collins, Colo.

Marine invertebrates.—There were 27 separate transfers of marine invertebrates from the Bureau of Fisheries, which constituted in the aggregate the principal addition to this division. Four of these consisted of material obtained on the expedition of the steamer *Albatross* to the Philippine Islands during the period from 1907 to 1910, which had been worked up and described, as follows: About 10,000 specimens of Crustacea Euphausiacea, by Dr. H. J. Hansen, of Copenhagen, Denmark; 183 lots of Salpa and Pyrosoma, by Prof. Maynard M. Metcalf, of Oberlin College; about 150 starfishes, nearly all type specimens, by Prof. Walter K. Fisher, of Leland Stanford Junior University; and about 1,000 annelids, by Prof. Aaron L. Treadwell, of Vassar College. Other noteworthy accessions from this source included about 5,000 specimens of decapod crustaceans from the cruise of the steamer *Albatross* in the northwestern Pacific Ocean in 1906, now being studied by Miss Mary J. Rathbun; about 2,700 pteropod mollusks and 179 bottles of crustaceans obtained in the tow net by the Coast Survey steamer *Bache* in 1914; about 500 pteropods collected by Dr. H. B. Bigelow on the first cruise of the schooner *Grampus* during the spring of 1915; more than 3,000 miscellaneous specimens from investigations by the steamer *Fish Hawk* in Chesapeake Bay during the autumn of 1915 and the spring of 1916; about 1,000 specimens of fresh-water mollusks from the Mississippi River; and 495 mollusks and other marine invertebrates obtained by Mr. G. Dallas Hanna on the Pribilof Islands, Alaska.

A large accumulation of samples of ocean bottom, contained in nearly 11,000 bottles, secured by vessels of the Coast and Geodetic Survey in the Atlantic and Pacific Oceans and the Gulf of Mexico, were deposited by the Department of Commerce. The Carnegie Institution of Washington contributed several valuable collections, one of which included about 5,000 specimens of miscellaneous marine invertebrates obtained by Mr. C. R. Shoemaker in the Danish West Indies, and another, about the same number of land and marine

mollusks from the Florida Keys, gathered by Dr. Paul Bartsch. Mr. John B. Henderson presented over 3,000 marine invertebrates from dredgings off the coast of Florida by his yacht *Eolis*, and about 7,000 land and fresh-water shells collected by himself and Dr. Bartsch in Cuba in June, 1916.

Many of the smaller donations were also of much interest and value, and attention is specially called to the number of types presented by specialists for permanent preservation in the national collections. These were as follows: From Dr. H. A. Pilsbry, 8 paratypes of a mollusk, *Oreohelix yavapai* var. *angelica;* from Prof. Paul S. Welch, 6 paratypes of two forms of snow worms of the genus *Mesenchytraeus;* from Mr. W. F. Webb, types of two Philippine land shells of the genus *Amphidromus*, described by Dr. Bartsch; from Mr. J. Urita, types of 3 new species of crabs from Japan, and from the University of Michigan, types of 2 new species of land crabs from South America, all described by Miss Rathbun; from Mrs. Mary Vaux Walcott, the type of a new subspecies of land shell from Montana, *Oreohelix yavapai mariae* Bartsch; from Mr. James H. Ferris, many cotypes of land shells from Arizona and New Mexico; from Mr. Austin H. Clark, the type of a new crinoid from New Zealand, the first crinoid recorded from those islands; from Prof. Frank Smith, the type of *Helodrilus welchi* Smith, a new earthworm from Kansas; from Dr. A. L. Treadwell, a cotype of *Metalonome brunnea*, an annelid; and several cotype slides of protozoans described by Miss Irene McCulloch and Miss Olive Swezy, of the University of California.

The exceedingly large number of specimens which reach this division each year, to a great extent in miscellaneous and diversified collections, imposes upon the members of the staff especially arduous and painstaking duties in the matter of sorting, classifying, recording and arranging the material. The past year was no exception in this respect, yet opportunity was found for continuing and completing in part the revision of material in the several great groups embraced in the division, begun some years ago, but always more or less in retard owing to the lack of sufficient skilled assistants to keep the work constantly up to date. Nevertheless, it can be said that the various branches of the collections have at all times been in very fair condition for convenient reference.

Dr. William H. Dall has rearranged the mollusks from the west coast of America, incorporating all previously unclassified material and correcting the nomenclature. The revision of the bivalves has been completed, while that of the gasteropods is about half finished. The Japanese marine shells have been segregated, including the original collection, with the material secured by Stimpson and a number of Gould's types, generous gifts from Mr. John B. Henderson,

and a very large number of specimens from the Imperial University of Tokyo and from Mr. Hirase. The South American, European and a part of the miscellaneous foreign land shells, and the Japanese land and fresh-water shells, have also been rearranged and their classification and labeling perfected. Other collections of mollusks of which the labeling and registration were completed or nearly so were the large donation by Mr. Henderson in 1915; the material from St. Thomas, Danish West Indies, contributed by the Carnegie Institution of Washington; the material from the Smithsonian and Childs-Frick African expeditions; and about 2,000 miscellaneous specimens from the Bureau of Fisheries. The extensive collections of echinoderms, of which about 16,000 specimens have so far been determined by Mr. Austin H. Clark, are being labeled, card-catalogued, placed in new containers and systematically arranged in the storage stack. A similar revision of the immense collection of madreporarian corals is also in progress.

Dr. William H. Dall, honorary curator of mollusks, completed his revision of the Nassidae and Columbellidae of the west coast of America, and a special report on the Oligocene beds of Florida. He began work on the Galapagos land shells collected by the expedition of the California Academy of Sciences, and also on a checklist of the marine bivalves of the west coast of America from the Arctic Sea to San Diego, Cal. Miss Mary J. Rathbun, associate in zoology, submitted the manuscript of a bulletin on the catometopous or grapsoid crabs of America, covering 6 families and about 230 species, each of which is described and figured. A study by her of the swimming crabs, family Portunidae, is well advanced, but there still remains to be examined a very large amount of material from the Philippines and the northwestern Pacific, as well as a collection made by the *Endeavour* in Australian waters and transmitted by the Australian Museum for identification. A short paper on the crabs of the genus *Osachila* from the east coast of North America, and a note on the genus *Cymopolia* which was restored to validity in place of *Palicus* were prepared and published.

The curator of the division, Dr. Paul Bartsch, in addition to contributions cited in the bibliography, had two papers in press at the close of the year, one on the "Californian land shells of the Epiphragmophora traskii group," the other on "Two new land shells from the western States." The following were also nearly ready for publication, namely, on the "Philippine mollusks of the genus Amphidromus," on "New marine mollusks from the west coast of America," and "A monograph of the west American Eulimidae." Dr. Bartsch likewise had in progress a report on the Miocene, Pliocene, and Pleistocene Pyramidellidae of North Carolina, Virginia and Maryland, and another on the land shells of the Lesser Antilles. His obser-

vations on the Bahama Cerions planted on the Florida Keys under the auspices of the Carnegie Institution were continued.

Mr. Austin H. Clark, assistant curator, continued the preparation of his reports on the crinoids of the *Siboga* and *Ingolf* expeditions, and of part 2 of his "Monograph of existing crinoids," which latter was nearly completed, besides finishing a revision of certain families of oligophreate comatulids. During the overhauling of the general echinoderm collection by Mr. Clark, above referred to, 39 new species were discovered and described. Mr. Waldo L. Schmitt, assistant curator, completed a paper on the "Marine decapod Crustacea of California," for publication by the University of California, and continued his studies on macruran forms from the Atlantic coast. Mr. William B. Marshall, assistant curator, devoted such time as could be spared from the care and classification of current accessions of mollusks to the study of the pearly fresh-water mussels, preparing three papers, one descriptive of three new species of South American Diplodonta. Mr. C. R. Shoemaker, aid, continued his study of the Amphipoda.

Dr. T. Wayland Vaughan, custodian of madreporarian corals, gave consideration mainly to the subject of recent coral faunas, completing an extensive paper entitled "Some shoal-water corals from Murray Island, Australia, Cocos-Keeling Islands and Fanning Islands," and a study of "The temperature of the coral reef tract," both of which are to be printed by the Carnegie Institution of Washington; and also a shorter paper on some corals from Kermadec Islands which will be published in New Zealand. "Some shoal-water marine bottom samples from Murray Island, Australia, and comparisons of them with samples from Florida and the Bahamas," was the title of a contribution for the Carnegie Institution by Dr. Vaughan, in collaboration with Dr. Joseph A. Cushman, Dr. Marcus Isaac Goldman, Dr. Marshall A. Howe, and others. Mr. H. K. Harring, custodian of Rotatoria, finished his "Revision of the rotatorian genera Lepadella and Lophocharis," and continued his studies of the Rotifera of the District of Columbia. He also examined two large collections of plankton, one for Dr. Edward A. Birge, director of the Wisconsin Geological and Natural History Survey, the other made in Alaska by Mr. J. M. Jessup, of the U. S. Geological Survey. Dr. Charles Wardell Stiles, custodian of the section of helminthological collections, and Dr. B. H. Ransom, assistant custodian, conducted important investigations on the parasites of man and other animals.

With respect to the work of collaborators not resident in Washington, it may be said that Dr. J. A. Cushman, of the Boston Society of Natural History, submitted part 6 of Bulletin No. 71, a monograph of the foraminifera of the North Pacific Ocean, and a paper describing new species of foraminifera from the Philippines. He

also began the study of the collection of the same group from the Atlantic Ocean. Dr. Ludwig Döderlein, of Strasburg, Germany, will soon have ready his report on the astrophytons of the *Albatross* Philippine expedition of 1907–1910, while accounts of other groups from the same expedition are in a more or less advanced state, such as those on the Salpidae and Pyrosomidae by Prof. Maynard M. Metcalf; on the echinoids, by Dr. Theodor Mortensen, of Copenhagen, Denmark; on the ophiurans, by Prof. René Koehler, of Lyon, France; and on the starfishes, by Prof. Walter K. Fisher. Dr. H. A. Pilsbry finished his monograph of the Cirripedia represented in the collections of the Museum. Other researches on which good progress was reported are those by Prof. F. Smith on North American Lumbricidae, by Prof. A. L. Treadwell on polychaetous annelids and the Eunicidae, by Dr. Max Ellis on discodrilid worms, and by Prof. Charles B. Wilson on parasitic copepods.

Advantage was taken of the facilities for research afforded by the division by an unusually large number of specialists and students. Mr. John B. Henderson, Regent of the Institution, continued his study of Antillean mollusks. Others who consulted the mollusk collections were Dr. H. A. Pilsbry, of the Academy of Sciences of Philadelphia; Mr. George H. Clapp, of Pittsburgh, Pa.; Prof. Bohumil Shimek, of the State University of Iowa; Mr. G. Dallas Hanna, of the Bureau of Fisheries; Mr. Walter F. Webb, of Rochester, N. Y.; Mrs. G. L. Chaney, of Salem, Mass.; Mr. Bryant Walker, of Detroit, Mich.; Mr. Edward Caum, of George Washington University; and Mrs. T. S. Oldroyd, of Los Angeles, Cal. Mr. George Mathai, of Emanuel College, Cambridge, England, a native of Tranquebar, India, made studies of corals; Prof. Aaron L. Treadwell, of annelids; Prof. Walter K. Fisher, of starfishes; Prof. Maynard M. Metcalf, of Salpa and Pyrosoma; Dr. W. G. Van Name, of the New York State Museum, of ascidians; and Dr. Marcus I. Goldman, of the Geological Survey, of marine bottom deposits. In connection with their paleontological work, Dr. Julia A. Gardner and Dr. Chas. W. Cooke, of the Geological Survey, and Prof. G. D. Harris, of Cornell University, spent some time in the division.

Material for research was supplied to several of those above mentioned and also to Dr. R. P. Bigelow, Dr. Walter Faxon and Dr. Hubert L. Clark, of the Museum of Comparative Zoölogy; Dr. Wesley R. Coe, of Yale University; Prof. J. H. Gerould, of Dartmouth College; Dr. J. Percy Moore, of the Academy of Sciences of Philadelphia; Dr. R. C. Osburn, of the Connecticut College for Women; Dr. M. A. Howe, of the New York Botanical Garden; Prof. R. W. Sharpe, of Brooklyn, N. Y.; Dr. Edwin Linton, of Washington and Jefferson College; Dr. Victor Sterki, of New Philadelphia, Ohio; Prof. C. C. Nutting, of the State University of Iowa; Dr. C. O. Esterly,

of Occidental College, Los Angeles, Cal.; Prof. Harry B. Torrey, of Reed College, Portland, Oreg., and Mr. J. T. Watkins, of the Coast and Geodetic Survey.

Plants.—The Department of Agriculture transferred to the division of plants 6,653 specimens collected by various bureaus, four lots from the Bureau of Plant Industry, as follows, being of especial value: Mounted grasses to the number of 2,983; 552 specimens from the western United States, obtained under the direction of Prof. A. S. Hitchcock in the course of field work devoted chiefly to a study of grasses; 989 specimens also from the western States, gathered by Mr. W. W. Eggleston; and 390 specimens from southern California, collected by Mr. G. N. Collins and Mr. J. H. Kempton. Another very important addition included about 8,000 specimens deposited by the Carnegie Institution of Washington, comprising both herbarium and formalin preparations, resulting from botanical explorations in Brazil and Argentina during the summer of 1915 by Dr. J. N. Rose, associate of the Museum. Besides cactus material, for which this expedition was specially undertaken, the collection consists chiefly of ferns, grasses, algae and mosses. About 2,000 plants from Peru and Bolivia received from the Peruvian expedition of 1914–15, conducted under the auspices of Yale University and the National Geographic Society in cooperation with the Department of Agriculture, are of especial interest as coming from a part of the Andean region from which very little has been obtained in recent years, and as contributing many species new to the herbarium.

Of 2,351 plants from the Bureau of Science, Manila, P. I., about one-half are from the Dutch island of Amboina and represent critical material collected by the late C. B. Robinson with a view to ascertaining the identity of the species described long ago by Rumphius from that island. The Robinson collections are now being studied by Mr. E. D. Merrill, of the Bureau of Science, whose work will be of great value as affording a satisfactory basis for the proper understanding and identification of many closely related species from other parts of the East Indian region, which have often been recorded under untenable names. Five hundred Chinese plants, an instalment of the well-known exsiccatae, Plantae Wilsonianae, from the Arnold Arboretum, are of particular importance as including the type collections of many new species from eastern Asia. Mrs. William H. Seaman, of Washington, presented 2,645 specimens, constituting the private collection of the late Prof. Seaman, gathered during a residence of many years in the District of Columbia, and including a large representation of the plants of this region. Among other gifts may be mentioned 510 specimens of Panama plants from Mr. H. Pittier, of the Department of Agriculture, and 650 specimens of Sphagnum from Mr. William R. Maxon.

Most of the plants mounted were recorded and incorporated in the reserve collection, together with miscellaneous mounted material, including a small part of the Charles Mohr herbarium not reached the previous year. The distribution now in progress will cover the entire phanerogamic herbarium and effect a permanent arrangement of the accumulated mounted specimens. The relief of congestion afforded by the 25 cases left vacant by the withdrawal of the herbarium of the late Dr. Edward L. Greene early in 1915 has proved only temporary, and the provision of additional cases will soon become extremely urgent, notwithstanding that all duplicates and unassorted material have been eliminated from the phanerogamic study series.

The segregation of type and duplicate type specimens of phanerogams was continued by Mr. Standley. These now amount to 6,264 specimens, labeled, recorded and kept apart by themselves in special cases, an arrangement which has been found exceedingly advantageous to the members of the staff and to visiting botanists. Progress was also made in reorganizing the cryptogamic collections, particular attention having been given to the fungi and mosses. The former were entirely rearranged by Mr. H. R. Rosen, and the latter by Miss M. F. Miller. The quantity of accumulated material pocketed, mounted and partly distributed in the herbarium was large, reaching, in the case of the mosses, about 25,000 specimens. The classification followed is, with very slight modification, that of Engler and Prantl's "Natürliche Pflanzenfamilien." The completion of this work should place the collections of both these groups in satisfactory condition.

The curator of the division, Mr. Frederick V. Coville, continued his study of the genus *Vaccinium*, begun several years ago. Favorable progress was made in the preparation of the manual of the flowering plants and ferns of Washington, alluded to in the last report, under the supervision of Mr. Coville and Prof. A. S. Hitchcock, and it is hoped that it may be possible to have it issued in the form of a small pocket volume early in 1917. The use of ultra-technical terms is being avoided as much as possible in order to make the work genuinely useful to amateurs and to others without professional botanical training. Besides the material afforded by the division, which has been segregated in a series of cases as a District herbarium, the collecting of fresh specimens is being extensively carried on with the help of botanists interested in the project, especially with reference to critical and poorly represented groups. Provisional manuscript keys to the families, genera and species represented in the District flora have already been practically completed and distributed in an edition of about 40 sets, primarily for the benefit of those who are cooperating in the work. When tested and revised, they will form the basis for the final manuscript.

Dr. J. N. Rose, associate in botany, continued his investigations on the Cactaceae in collaboration with Dr. N. L. Britton, in preparation of a monograph of the group under the auspices of the Carnegie Institution of Washington. The first installment of this work was submitted for publication during the year. Mr. William R. Maxon, associate curator, contributed an additional paper (No. 6) to the series entitled "Studies of tropical American ferns." His work on the ferns of North America related especially to the genus *Polypodium*. Mr. Paul C. Standley, assistant curator, prepared several papers, including a second number of the series "Studies of tropical American phanerogams." In addition to other descriptive matter, he carried nearly to completion the manuscript for the family Allioniaceae for the "North American Flora." During such time as could be spared he also began the identification of the phanerogamic plants collected by the Smithsonian African Expedition, and, despite the limited amount of east African material available for comparison, excellent progress was made, nearly one-half of the specimens being determined during the year. Mr. H. R. Rosen, aid, was the author of a paper relating to leaf galls, and Mr. E. S. Steele, editorial assistant, gave attention, as usual, to the study of the genus *Laciniaria*. Capt. John Donnell Smith, associate in botany, continued his studies of Central and South American plants.

Besides the constant use of the plant collection by members of the scientific staff of the Department of Agriculture, investigations were prosecuted in the herbarium by the following botanists located elsewhere, on the subjects indicated, namely: Mr. E. D. Merrill, of the Bureau of Science, Manila, P. I., on East Indian and especially Philippine plants; Dr. N. L. Britton, Director-in-Chief of the New York Botanical Garden, on Cactaceae; Dr. P. A. Rydberg, of the same institution, on the "North American Flora" and the "Rocky Mountain Flora"; Dr. B. L. Robinson, Curator of the Gray Herbarium of Harvard University, who is preparing a monographic revision of the genus *Coleosanthus;* Prof. Aven Nelson, of the University of Wyoming, on several genera of plants as represented in the Rocky Mountain region; Prof. William Trelease, of the University of Illinois, monographic studies of the genera *Phoradendron* and *Quercus;* Mr. Harold St. John, of the Canadian National Herbarium, Ottawa, on the genus *Androsace;* and Prof. G. W. Stevens, of Cambridge, Mass., on the flora of Oklahoma.

The number of specimens lent for study outside of Washington was 5,112, the principal sendings having been as follows: Ferns of the genus *Nephrolepis* to the Brooklyn Botanic Garden for Dr. R. C. Benedict; Hepaticae, including examples of the genus *Marchantia* which he is monographing, to Prof. Alexander W. Evans, of Yale University; specimens of *Coleosanthus* and *Androsace* to the Gray

Herbarium, those of the former genus for Dr. Robinson, of the latter for Mr. Harold St. John, who is engaged on a revision of the genus; Hepaticae, nearly all belonging to the Louisiana collection of the late Rev. A. B. Langlois, to serve as a basis for an annotated list of the group as represented in that State, to Miss Caroline C. Haynes, of Highlands, N. J.; specimens of *Adenostegia* and *Lotus* to the Leland Stanford Junior University for a revision of these genera under the direction of Prof. LeRoy Abrams; specimens of *Carex* to Mr. K. K. MacKenzie, of East Orange, N. J., for a monographic study of the genus as represented in North America; and specimens of *Senecio* to the Missouri Botanical Garden for a monographic work by Dr. J. M. Greenman. A very large amount of material was sent in various lots to the New York Botanical Garden, partly for identification and partly for use in the preparation of contributions to the "North American Flora," that intended for the latter purpose including 857 specimens of the difficult genus *Parosela* for study by Dr. P. A. Rydberg. Algae were determined for the Museum by Dr. M. A. Howe; fungi, by Dr. W. A. Murrill; and mosses, by Mrs. E. G. Britton and Mr. R. S. Williams.

Exhibition collection.—The principal accomplishment of the year was the opening of the whale exhibit in the second story south hall of the west wing of the new building, which, though not quite completed, had been sufficiently advanced to furnish a very impressive and interesting display. The huge model and the skeleton of the sulphurbottom whales occupy the center of the floor space. On the north side are four long wall cases, two containing skeletons of the smaller toothed whales, and one with casts and models of dolphins and porpoises, the fourth being reserved for a series of photographs depicting the various stages of preparation in the field of the above mentioned model and skeleton of sulphurbottom whales. From the ceiling are suspended five large skeletons of whalebone whales, space being reserved for one of the rare gray whale now in process of cleaning. On the eastern wall is displayed a half cast of a beaked whale, while distributed in various places on the other walls are casts of heads, mostly of dolphins and porpoises. The broad spaces between the windows are intended to be used for the large whale heads now with the osteological collection. Thus the whale hall will contain all the cetacean material at present available for exhibition, except the large toothed whale, *Berardius bairdi*, which for lack of space there must be retained in the skeleton hall. The work of reinstalling this exhibit, the larger objects in which were only recently brought from the older building, has been one of considerable magnitude, and has required unusual skill on the part of the preparators.

The splendid group of the common elk or wapiti of the Rocky Mountain region, forming part of the Government exhibit at the

Panama-Pacific International Exposition, was transferred to the Museum during the year. It shows a family of three individuals, male, female, and young, at the first approach of winter. Snow has fallen during the night, while there was no wind, and lies heavily on the pine boughs and branches. Designed and executed by Mr. James L. Clark, of New York, it is of the same size as the bison and moose groups and will be placed between them in the great western skylighted hall of American mammals. Temporarily installed on its arrival without a case, one is now being constructed for it in order that it may be safely preserved under glass.

To permit a more adequate representation of South American mammals in the western end of this same hall, the two cases originally assigned to this purpose have been supplemented by a large wall case, 17 feet long. In the upper part of this case the ordinary pyramidal shelf arrangement has been replaced by a large natural tree branch, on which monkeys and sloths are mounted, the lower part being occupied by a vicugna and several deer. The floor in these cases has been covered with an olive-colored sand, on which the animals are placed in easy position without the customary stands. This innovation, which has been tested for more than a year, has been commented on with much favor by many visiting naturalists and is so satisfactory in its results that the method will be extended as far as the conditions warrant.

A large number of small mammals were added in various parts of the exhibition series, especially in the African section. Of larger specimens mention need only be made of an example of the rare Antarctic leopard seal, a fine mounting of the Pacific coast harbor seal and a splendid wild Chinese boar. To the bird collection there were few additions, though many old and inferior preparations, especially of parrots, were made over, greatly enhancing the appearance of the entire exhibit, which was further improved by a radical rearrangement of a large portion of the North American birds. The owls were brought together in one case and the crowded condition of several other cases, particularly among the water birds, was greatly relieved. The removal of the skeletons of the smaller toothed whales, as before described, resulted in certain readjustments in the hall containing the vertebrate skeletons. The assembling in the case thus vacated of the order Perissodactyla (tapirs, horses, etc.) made it possible to devote the two wall cases in the eastern part of the hall to the Artiodactyla (deer, sheep, antelopes, etc.). Opportunity was also found to place under glass the fine skeleton of the American bison, which formerly stood uncovered, and to install in one of the cases the skeletons of a manatee and dugong.

Explorations.—Through the generosity of friends and other cooperation, this department participated in the results of important field

work in various parts of the world. Reference was made in the last report to the provision by Dr. W. L. Abbott for extending the operations of Mr. H. C. Raven to the island of Celebes, where the first year was successfully spent. Mr. Raven returned to the United States for rest and refitting early in the summer of 1915, but left again for the East about the middle of October, and has already reported the shipment of a collection from the northeastern extremity of Celebes. Dr. Abbott himself, at the end of the year, was embarking for Santo Domingo for the purpose of obtaining material in that little-known island.

Mr. John B. Henderson, Regent of the Smithsonian Institution and a valued collaborator of the Museum, continued investigations with his yacht *Eolis*, dredging along the Pourtales Plateau with excellent success and presenting the Museum with about 3,000 specimens of marine invertebrates resulting from the cruise. During the early part of the summer, with Dr. Paul Bartsch as his guest, he spent about three weeks in Cuba, exploring certain parts of the Organos Mountains for the purpose of completing all of the links in the chain of collecting stations from Havana province to the westernmost part of Pinar del Rio. Together they visited the Cuzco Mountains adjoining the Sierras, and the region about Rangel; thence they proceeded westward to the mountains close by Santiago de los Baños; then, omitting a large section of the Sierras which had previously been more or less completely examined, they went to Luis Lazo to look for living specimens of the lost *Licina percrassa* of Wright. About 7,000 land shells secured during this expedition were donated to the Museum.

Large collections in zoology and botany obtained during explorations on behalf of the Carnegie Institution of Washington have been made permanently accessible to the scientific world by their deposit in the National Museum, a liberality which is highly appreciated by naturalists. During last year there were several very important accessions from this source. The expedition to Brazil and Argentina by Dr. J. N. Rose for the Carnegie Institution and New York Botanical Garden for the purpose of collecting and studying Cactaceae, furnished about 8,000 specimens of plants, besides much zoological material. With the assistance of Mr. Paul G. Russell, of the Museum, who accompanied him, Dr. Rose was able to make much larger collections, including plants other than cacti, than would otherwise have been possible. The course of the trip, which consumed over 5 months, was from Bahia to Buenos Aires and across Argentina to Mendoza near the foot of the Andes. The investigations for the Carnegie Institution, chiefly in the West Indian region, undertaken by Dr. T. Wayland Vaughan, of the Geological Survey and custodian of madreporarian corals in the Museum, with the view of determining

the rate of growth of corals, their rôle in reef building and related problems, were continued during last year. In connection with these studies and for the purpose of securing as complete a representation as possible of the coral fauna of the Danish West Indies, Mr. C. R. Shoemaker, aid in the division of marine invertebrates, was detailed for two months during the summer of 1915 to collect in the open waters, bays and channels of the Virgin Islands. The main objects of the expedition were carried out with considerable success and incidentally some 5,000 specimens of marine invertebrates other than corals were secured for the Museum. Shore collecting was also done and a few land animals obtained. Dr. Paul Bartsch paid a fourth visit to the Florida Keys in the latter part of May and early June, 1916, to inspect the colonies of Cerion mollusks transplanted from the Bahama Islands. He found an abundance of young of the second generation of Florida-grown individuals, but no adult specimens, which are looked forward to with great expectation since this generation marks a critical point in this study of evolution.

The collecting field of Mr. Arthur de C. Sowerby during the summer and fall of 1915 was northern Manchuria, whence, in spite of great difficulties, he was able to forward an important collection of animals of various classes. The expedition to northeastern Siberia in the schooner *Eagle*, described in the last report, proceeded from Seattle, through Bering Strait, to Nizhni Kolymsk, near the mouth of the Kolyma, the easternmost of the large Siberian rivers. Here, considerably north of the Arctic Circle, the party wintered, and from this place collecting trips were made into the interior as far south on the Kolyma as Verkhni Kolymsk. In September, 1915, the expedition returned to Nome, Alaska. Mr. Copley Amory, jr., collaborator in zoology, to whom the success of the undertaking was largely due, secured through his indefatigable efforts the large series of mammals and birds mentioned under the accessions, besides specimens in various other groups, principally plants, fishes and birds' eggs, all of which he generously presented.

The Peruvian expedition of 1914–15 under the joint auspices of Yale University and the National Geographic Society made large collections of animals and plants which were deposited in the Museum. The plants, numbering about 2,000, were mainly gathered by Prof. O. F. Cook and his assistant, Mr. G. B. Gilbert, both of the Bureau of Plant Industry, who were detailed to this exploration by the Department of Agriculture. The zoological results, especially as regards vertebrates, were no less important, due to the intelligent activities of Mr. Edmund Heller, who was also attached to the expedition. Mr. F. J. Dyer, American Consul at La Ceiba, Honduras, has shown his continued interest in the Museum by forwarding from

that country from time to time many valuable specimens, especially of insects and land mollusks.

In the fall of 1915 the Bureau of Fisheries began a study of the biologic and hydrographic conditions of Chesapeake Bay at different seasons under the direction of Mr. Lewis Radcliffe. The steamer *Fish Hawk* made three short cruises during the year, in October, December and April, respectively, on each of which the division of marine invertebrates was permitted to send a representative for the purpose of preserving specimens desired for the Museum. Mr. William B. Marshall was present on the first cruise, Mr. Clarence R. Shoemaker on the second, and Mr. J. A. Mirguet on the third.

DEPARTMENT OF GEOLOGY.

The additions to this department were received in 185 accessions, with specimens distributed to the several divisions and sections approximately as follows: Division of systematic and applied geology, about 980 specimens of which 32 were meteorites, besides several tons of material from the Yellowstone National Park; division of mineralogy and petrology, 477 minerals and many specimens of petrology which had been only partly unpacked and recorded; section of invertebrate paleontology, 47,699 specimens; section of vertebrate paleontology, 397 specimens; and section of paleobotany, 307 specimens.

The number of lots of specimens received for examination and report in the interest of the senders amounted to 715, of which 334 were geological, 328 mineralogical, and 53 paleontological.

Systematic and applied geology.—In the course of his explorations in the Rocky Mountain region during the summer of 1915, Dr. Charles D. Walcott, Secretary of the Smithsonian Institution, procured for the department of geology in the Yellowstone National Park an exceedingly large and important collection, which included a well selected series of the siliceous and calcareous sinters in masses often of exceptional size, native sulphur, silicified wood, sundry mineral specimens and a large representation of volcanic rocks. As a supplement to these materials and having in view the installation of a Yellowstone National Park exhibit, a large relief map of the Park, colored to show its geology and general geographic and physiographic features, was purchased, and 10 transparencies of some of the more striking views in the Park were made by Mr. J. K. Hillers.

Through the cooperation of Dr. W. T. Schaller, of the Geological Survey, who is making a study of the pegmatite deposits of southern California, the Museum was enabled to obtain a systematic collection from that area, which is to be arranged in illustration of the geology and mineral associations of these peculiar formations, which are of unusual interest both from a scientific point of view and on

account of the gem minerals they yield. A somewhat smaller series was secured for the Museum by Dr. Joseph E. Pogue from the emerald mines at Muzo, Colombia. Through the intercession of Mr. Victor C. Heikes, of the Geological Survey, a number of scheelite specimens of more than ordinary interest were presented by Mr. L. G. Schwalenberg and Capt. Duncan MacVichie, of Salt Lake City, Utah. Mr. B. H. Dunshee, of Butte, Mont., contributed an unusually fine, large specimen of secondary copper sulphate from the Silver Bow Mine of that district.

The Geological Survey transferred specimens illustrating the nitrate deposits in southern Idaho and eastern Oregon, and also of potash-bearing salts and associated rocks from the vicinity of Tonopah, Nev., presented by Mr. D. H. Walker. These collections, though small, are of much interest in view of the importance in the present emergency of the salts mentioned. Dr. Joseph P. Iddings, who during the past two years has traveled extensively among the islands of the south Pacific and Indian Oceans, obtained for the Museum some desirable examples of the peculiar problematic bodies known as obsidianites and Darwin glass from Borneo and Tasmania; an important series of phosphate rocks from Ocean and Makatea Islands; and a large mass of diatomaceous earth from Uahuka.

To the building stone collection were added a polished slab of the Mount Airy, N. C., granite, a gift of the North Carolina Granite Corporation, and two large slabs of Tokeen Alaska marble, presented by the Vermont Marble Company.

The division was especially fortunate in the acquisition of meteoric material. The gifts comprised two large, fine samples of meteoric iron from Mount Edith and Mungindi, Australia, presented by Mr. C. S. Bement, of Philadelphia, through Prof. F. W. Clarke; a 510-gram fragment of the Molong, New South Wales, pallasite, from the Department of Mines, Sydney, Australia; and a 52-gram fragment and 15 grams of shavings of the well-known Toluca iron, from Dr. F. C. Nicholas, of New York. Those obtained through exchange consisted of a slice of a peculiar, coarsely crystalline meteoric iron found near Cookeville, Tenn., a 36-gram slice of the Silver Crown, Wyo., iron, 15 grams of the Pillistfer, Russia, meteoric stone, and a 35-gram specimen of the Whitfield County, Ga., meteoric iron, from Ward's Natural Science Establishment, Rochester, N. Y.; 80 grams of the Whitfield County and 227 grams of the Locust Grove, Ga., irons, from the Field Museum of Natural History; a 272-gram piece of the Mount Stirling iron, from the Australian Museum, Sydney; a 382-gram slice of the Thurlow iron, from the Victoria Memorial Museum, Ottawa, Canada; and a 22-gram fragment of the Sams Valley, Oreg., meteoric iron, and a 10-gram fragment of Grossliebenthal, Russia, meteoric stone, from Mr. W. H. Tomlinson, Swarth-

more, Pa. The purchases included two meteoric stones from near Plainview, Hale County, Tex.; a fragment of meteoric stone found in Lake Okechobee, Fla.; and the following 15 samples of stony and iron meteorites, namely, Aussun, France, 53 grams; Beaconsfield, Australia, 124 grams; Skookum Gulch, Yukon, 174 grams; Blithfield, Canada, 129 grams; Bori, India, 120 grams; Chandakapur, India, 11 grams; Grūneberg, Prussia, 9 grams; Jackson County, Tenn., 46 grams; Kingston, N. Mex., 335 grams; Laurens County, S. C., 13 grams; Lutschaunig, Desert of Atacama, South America, 74 grams; Locust Grove, Ga., 373 grams; Lundsgard, Sweden, 97 grams; Mauerkirchen, Austria, 40 grams; Ponca Creek, Holt County, Nebr., 30 grams.

Work on the reserve series consisted mainly in the arrangement, labeling and cataloguing of the large collection made by Secretary Walcott's party in the Yellowstone National Park; of the Tenth Census ores of the precious metals, an old collection which has long needed attention; and of other miscellaneous materials, including the mineral phosphates and a series of gold, zinc and copper ores from Colorado. The condition of the collections in this division is fairly satisfactory, though the non-metallic minerals still need overhauling and rearranging.

But few special investigations were undertaken upon the collections in the division of geology, though numerous identifications were made and many of the older ones confirmed. The head curator continued his researches on meteorites, and furnished material for several publications on the subject. Mr. Robert B. Sosman, of the Geophysical Laboratory, had the use of specimens in connection with his studies on types of prismatic structure in igneous rocks, and other members of the same institution, as also members of the Bureau of Standards and the Geological Survey, consulted the collections and utilized the facilities of the laboratory from time to time. Dr. Joseph P. Iddings spent several weeks unpacking and arranging his collections from the islands of the Indian and southern Pacific Oceans, and Mr. D. F. MacDonald worked upon his collections from the Panama Canal Zone.

Mineralogy and petrology.—The largest addition to the mineral collections, received from the Geological Survey, consisted of about 300 specimens from California, mostly illustrating the report of Dr. W. T. Schaller on the gem minerals of the pegmatites. The principal gifts were as follows: From Mr. C. S. Bement, of Philadelphia, through Prof. F. W. Clarke, some magnificently crystallized specimens of hodgkinsonite, betafite, eudialyte and hopeite; from Mr. Fritz Mella, of Santiago, Chile, four mineral specimens from Chile, including one exceptionally fine piece of ruby silver; and from Mr. Percy Train, of Manhattan, Nev., a suite of specimens of vashegyite,

variscite and associated rock, from Manhattan. Thirteen specimens of minerals, chiefly recent finds not heretofore represented in the Museum collections, were obtained in exchange from Mr. J. G. Manchester, of New York. Through purchase, the collections were enriched by a series of cut sapphires of varying colors, from Montana, and a fine cut kunzite; one excellent specimen each of native silver and erythrite from Cobalt, Canada; an unusually fine, large mass of the rare mineral hewettite; and a specimen each of the rare minerals euxenite and ampangabeite. Dr. E. T. Wherry, while in the field, collected an interesting series illustrating the occurrence of glauberite in the Triassic rocks, a series of shales showing diffusion rings, and specimens representing the genesis of the mineral chloropal.

The petrological collections were increased by 18 specimens of alkaline igneous rocks from the Ice River District, British Columbia, received in exchange from the University of Alberta, and by the following transfers from the Geological Survey, namely: 14 boxes of rocks illustrating the Taconic region of New England, as described by Dr. T. Nelson Dale; 148 specimens representative of the geology and ore deposits of the Helena mining district, Mont., as described by Dr. Adolph Knopf; 28 specimens illustrating the geology of the Apishapa quadrangle, Colo., as described by Mr. G. W. Stose; and 11 specimens of nepheline syenites and related rocks from near Brookville, N. J., described in a publication by Dr. F. L. Ransome.

Work on the cataloguing and arrangement of the type and other described material in cases in the office of the assistant curator has been completed, and the collection now secured against possible loss, at the same time being readily accessible to specialists, to whom alone it is of interest. The specimens accessioned during the year were for the most part assigned to the reserve series, although a few of the more showy ones were placed on exhibition in the "recent accession" cases.

The preparation of large case labels for the systematic mineral exhibition collection was continued. A new style of frame for holding these, made of mahogany and conforming to the design of the cases, was adopted. The writing of the labels themselves required much attention, as it is desired to have them not merely conform to Dana's System of Mineralogy, with the additions described since that work was published, but also to represent a new arrangement of the species in which various recent discoveries in chemistry and mineralogy might find expression. It is hoped that the series when completed will constitute a distinct contribution to the subject of mineral classification, and that the collected labels may be published, along with explanatory matter, for the benefit of curators of other mineral collections.

Dr. E. T. Wherry, assistant curator, contributed the results of several researches on interesting material contained in the collection

or recently received. One group of papers entitled "Notes on alunite, psilomelanite and titanite" will appear in the Proceedings of the Museum. Another paper, descriptive of "A peculiar intergrowth of phosphate and silicate minerals," was published in the Journal of the Washington Academy of Sciences. In examining specimens of zeolites from northern New Jersey, Dr. Wherry noted the resemblance of certain cavities they contain to the mineral glauberite, similar cavities in red shale having proved to represent that mineral. This discovery, first announced at a meeting of the Geological Society of Washington, was the subject of a note on "The lozenge-shaped cavities in the First Watchung Mountain zeolite deposits," printed in the Journal of the Washington Academy of Sciences. The conclusions reached as to the identity of the original mineral have been universally accepted. A brief report on calcite specimens collected in Yellowstone National Park by Mrs. Charles D. Walcott was incorporated in "Explorations and field work of the Smithsonian Institution in 1915." Work has been begun on a revision of the catalogue of gems in the Museum collection, which it is expected to complete early in the current year. It will include a rearrangement of the former lists, a recalculation of the weights of stones in terms of the new metric carat, and new descriptive text.

Invertebrate paleontology.—The Geological Survey deposited some 3,000 specimens of Tertiary fossils from the Atlantic and Gulf Coastal Plain, representing several years collecting by Dr. T. W. Vaughan and his assistants; 190 types and figured specimens described by Dr. E. M. Kindle and Mr. C. L. Breger in the 28th annual report of the Indiana Geological Survey; 58 specimens of Upper Cretaceous corals described by Mr. L. W. Stephenson; upward of 1,000 specimens representing 30 forms of Cretaceous fossils obtained by Mr. C. M. Bauer in the San Juan Basin, northwestern New Mexico, including types and figured specimens described by Dr. T. W. Stanton in a forthcoming Professional Paper of the Survey; and about 500 specimens of Devonian fossils described by Dr. E. M. Kindle in Bulletin 391 of the Survey and elsewhere.

Material was received in exchange as follows: From the North Carolina State Museum at Raleigh, a collection of Upper Cretaceous fossils of great historic interest as containing the types described by Prof. T. A. Conrad; from the Walker Museum, University of Chicago, 140 plastotypes, representing 131 species of Paleozoic fossils, which are of particular value inasmuch as many of the original types have been destroyed by fire; and from Ward's Natural Science Establishment, Rochester, N. Y., 10 specimens of fossil insects from the Florissant beds of Colorado. Among the gifts were the types of 3 new species of fossil crabs, represented by 35 specimens, described by Miss Mary J. Rathbun, and received from Mr. W. H. Over, of the University of

South Dakota; about 5,000 selected specimens of fossil Bryozoa and Ostracoda, from Dr. R. S. Bassler; and several thousand specimens of Tertiary Bryozoa from classic localities in Australia, from the National Museum at Melbourne.

In the laboratory of Secretary Walcott, all of the collections made by him have been labeled as to locality and formation, and most of the material has been prepared for study, Dr. Walcott having given much of his personal attention to this as well as to the rearrangement and cataloguing of the specimens. Mr. C. E. Resser, assistant curator, who has immediate custody of the Cambrian collections, completed during the year the work of assembling and arranging the brachiopods and trilobites. He also classified many thousand duplicates transferred to the Museum by Dr. Walcott in past years, and assisted the curator of the division in bringing together and arranging the rock collections illustrating the Paleozoic formations of North America, as well as in enlarging the biologic collection of brachiopods, which has been increased by over 60 standard drawers. This biologic series is the one most frequently consulted by students, and requires constant attention to keep it up to date. The curator, Dr. Bassler, has himself taken personal charge of the collections from the remaining divisions of the Paleozoic. Following a suggestion by Dr. Walcott, all of the western post-Cambrian Paleozoic material has been segregated and arranged in one room. A restudy and rearrangement of the Paleozoic corals, undertaken during the year, increased this collection by about 50 drawers of specimens. The accessions of the year were classified and distributed.

Mr. Charles Butts, of the Geological Survey, devoted nearly 7 months to the study and preparation of the large collection of Devonian fossils from the Appalachian region; and Mr. W. E. Crane, a retired civil engineer and experienced student and collector of fossils, spent several months upon the biologic series of brachiopods and the foreign Mesozoic fossils. Mr. Crane's familiarity with the paleontology of foreign countries enabled him to classify and arrange over 200 standard drawers of material, making it for the first time available for reference. His work was especially important for the Museum because of the accurate labels he was able to place with the specimens.

Mr. Frank Springer, associate in paleontology, aided by his private assistant, Mr. Herrick E. Wilson, continued his work on the fossil echinoderms under his charge. He also supervised the separation of the reserve and duplicate specimens in about 150 drawers of crinoids turned over to the Museum during the year, incorporating the study material selected in the general reserve series. Dr. E. O. Ulrich, also associate in paleontology, continued the preparation and study of the Lower Ordovician and related collections in connection with the monographs which he has under way.

The Mesozoic collections, remaining as heretofore in the care of Dr. T. W. Stanton and Mr. T. E. Williard, have increased so greatly in extent during the past five years as to necessitate in large part a complete rearrangement and geographical classification. Under the direction of Dr. William H. Dall, the work of indexing the Tertiary fossils was continued in the intervals of more urgent work.

Dr. Charles D. Walcott completed two papers, one entitled "The study of Cambrian Trilobites," the other discussing the conclusions of Dr. Rothpletz on the work of American geologists in the Cambrian and pre-Cambrian rocks of central Montana, based on his own field work and collections. Dr. Dall contributed a report on the fauna of the Oligocene beds of Flint River, Fla., collected by Dr. Vaughan and Mr. W. C. Mansfield of the Geological Survey, and commenced an account of the fossils of the Galapagos Islands, off the coast of Ecuador. These islands have a very peculiar fauna, upon the derivation of which Dr. Dall's studies are expected to throw much light. The final report on the Tertiary fauna of the Panama Canal Zone by Dr. Dall has been deferred in order to complete work on the Late Tertiary of the northwestern coast of America, on which good progress is being made.

Mr. Springer has delayed the completion of his monographs on the *Crinoidea flexibilia* and the genus *Scyphocrinus* that he may incorporate the results of studies, now in progress, on a considerable amount of new material recently received from his private collectors, but both of these important contributions are expected soon to be ready for printing. Dr. Ulrich continued his researches on Ozarkian and Canadian fossils and, in collaboration with Dr. Bassler, had nearly finished a monograph on the Silurian Ostracoda of Maryland, which will be published by the Maryland Geological Survey.

Dr. R. S. Bassler, curator of the division of paleontology, in collaboration with Mr. Ferdinand Canu, of Lyon, France, completed the text of a monograph on Early Tertiary Bryozoa of America, the making of the illustrations for which will occupy several months more. About 500 species and 47 new genera are described. A synopsis of American Tertiary Bryozoa was submitted for publication during the year by the same authors. Dr. Bassler also prepared a paper on the Cretaceous Bryozoa of Maryland for the Maryland Survey, and another on the Tertiary Bryozoa of Panama and the Windward Islands for the Carnegie Institution of Washington. Miss Mary J. Rathbun, associate in zoology, reported on a collection of fossil crabs from the Cretaceous of South Dakota, representing 3 species, all previously undescribed, one made the type of a new genus for which a new superfamily of the sub-tribe Dromiacea was constituted.

Dr. T. W. Stanton, custodian of the Mesozoic collection, described for the Geological Survey the "Non-marine Cretaceous invertebrates

of the San Juan Basin, New Mexico," this paper being based on material collected by the Survey and recently deposited in the Museum. Mr. C. E. Resser, assistant curator, continued as time permitted the preparation of a bibliographic index of American Cambrian fossils, and also an illustrated catalogue of trilobites for Dr. Walcott. Prof. T. D. A. Cockerell, of the University of Colorado, made a study of the fossil insects in the Museum collection.

Vertebrate paleontology.—The principal accession of the year in this division, as also the most valuable donation for a considerable period, was a nearly complete skeleton of a large mastodon, found on the farm near Winamac, Ind., of Capt. H. H. and Mr. W. D. Pattison, by whom it was presented, the disinterment having been made at the expense of the Museum. It has been mounted and installed in the exhibition hall of vertebrate paleontology. The Koren expedition to the Kolyma River region of northern Siberia was accompanied by Mr. Benno Alexander as collector of vertebrate fossils for the Museum, who, notwithstanding many difficulties encountered, obtained much valuable material, including nearly 200 individual specimens, of which the most important was a fine skull of the Siberian mammoth, the only skull of this northern form now in any American museum.

Through exchange the following specimens were received: From the California State Normal School at Los Angeles, a skull of the fossil dog *Canis orcutti* from the Pleistocene deposits of Rancho La Brea; from the Peabody Museum of Natural History of Yale University, casts of the bones constituting the type of the carnivorous dinosaur, *Allosaurus fragilis* Marsh; and from the American Museum of Natural History, a cast of the skull and lower jaws of the 3-toed horse, *Merychippus sejunctus*. The purchases included an important collection of the remains of small mammals from the Fort Union formation of Montana, and 10 restorations of dinosaurs modeled by Mr. Charles W. Gilmore, which add an important feature to the exhibition series in connection with the full-sized skeleton mounts.

The Geological Survey transferred some 30 specimens representing 9 species of fossil fishes and reptiles from the San Juan Basin, N. Mex., including two finely preserved turtles new to science and forming excellent exhibition specimens. The Biological Survey of the Department of Agriculture deposited a fossil turtle from a locality near Imlay, S. Dak., while three casts of fossil reptiles, the more important being reproductions of the type and paratype of the extinct crocodilian form, *Tomistoma americana* Sellards, were received as a gift from Dr. E. H. Sellards, State Geologist of Florida.

The identification, cataloguing and arrangement of the study collections has kept fully abreast with the current additions. The principal work by the preparators of this section was the mounting of the

Indiana mastodon skeleton presented by the Messrs. Pattison, the cleaning of mammal and other remains from the Fort Union beds and the Cumberland cave deposit in Maryland, and the working out and assembling of carnivorous dinosaur material. The skeleton of *Allosaurus fragilis*, mentioned in the last report, was entirely freed from the matrix. The vertebral column, complete from the skull to the base of the tail, many caudal vertebrae and ribs, the pelvis, and fore and hind limbs, in addition to the greater part of the skull, make it one of the most perfect specimens of the animal known. The skull and jaws have been skillfully restored, articulated and mounted, and the skeleton also will be prepared for exhibition at an early opportunity. Considerable portions of the skeletons of two other individuals belonging to the genus *Allosaurus* were also obtained in working over the same material. The restoration of the missing and broken bones of the *Stegosaurus* permits the prompt mounting of this specimen.

Mr. Charles W. Gilmore, assistant curator in charge of fossil reptiles, submitted for publication by the Geological Survey an account of the "Vertebrate faunas of the Ojo Alamo, Kirtland and Fruitland formations," and for the Museum a paper entitled "Description of two new species of fossil turtles from the Lance formation of Wyoming." Progress was also made with his monographic studies on the carnivorous dinosaur material in the Museum, which is expected to occupy his attention for at least a year or two more. Mr. James W. Gidley, assistant curator in charge of fossil mammals, continued with Mr. Gerrit S. Miller, jr., their joint revision of the recent and fossil rodents. He likewise proceeded with his studies of the Cumberland cave fauna and the Fort Union mammals, and completed two papers, entitled "The creodont genus Claenodon, with descriptions of new species" and "Notice of a new Paleocene mammal, a possible relative of the Titanotheres." Dr. O. P. Hay continued, under the auspices of the Carnegie Institution of Washington, his work on the vertebrate life of the North American Pleistocene period, and Dr. R. W. Shufeldt made use of the fossil bird material in connection with his studies.

Paleobotany.—The Geological Survey made important transfers of fossil plants, consisting partly of 200 specimens, representing 40 forms, from the San Juan Basin, northwestern New Mexico, including types and figured material described by Dr. F. H. Knowlton for a forthcoming Professional Paper; and of about 100 specimens from the Fox Hills formation, Greeley quadrangle, Colorado, also the subject of a paper by Dr. Knowlton published as Professional Paper 98-H. Dr. Wherry, of the division of mineralogy and petrology, presented two specimens representing two new species from the Triassic of Pennsylvania, which are of special value in view of the extreme rarity of plants from that horizon and locality.

The classification and arrangement of the paleobotanical collections, as outlined in the last report, was continued, and for a fair proportion of the Tertiary material it was completed. The identification and elimination from the study series of all duplicates has also been nearly accomplished. An important innovation was the substitution of a fireproof seaweed matting for cotton as a padding under the study specimens, which occupy some 4,000 standard drawers stored in the attic. This change has been made in view of the fact that many of the fossil plants are contained in pyritiferous shale, which, upon exposure to the air, decomposes to a powder, and while cotton serves admirably for the purpose, its elimination seemed advisable on account of its inflammability.

Dr. Knowlton continued his studies on Mesozoic and Cenozoic plants, devoting most of his time to the preparation of scientific papers, three of which were published during the year, two will appear in the Proceedings of the Museum, and a sixth, entitled "Flora of the Chaco and Kirtland formations in San Juan County, New Mexico," will be issued as part of a forthcoming Professional Paper of the Geological Survey. Dr. Wherry contributed a descriptive account of two new species of fossil plants from the Triassic of Pennsylvania.

The collections were utilized by Dr. G. R. Wieland, of Yale University, in connection with his work on fossil cycads for the Carnegie Institution of Washington; by Mr. E. W. Berry, of Johns Hopkins University, who continued his researches on Tertiary plants; and by Dr. Arthur Hollick, of the New York Botanical Garden, in continuation of his monograph on the Mesozoic plants of Alaska. They were also consulted by an exceptionally large number of specialists in attendance upon the many scientific meetings of the year. Among these visitors were representatives of the New York State Museum, the American Museum of Natural History, the Carnegie Museum, the Canadian Geological Survey; Yale, Princeton, Johns Hopkins and various State universities; Dr. A. F. Foerste, of Dayton, Ohio; Mr. Frank Anderson, of the California Academy of Sciences; and Dr. E. H. Sellards, State Geologist of Florida. Dr. Anselm Windhausen, of the Geological Survey of Argentina, and Prof. N. Gist Gee, of the University of Soochow, China, spent several days studying the general arrangement of the collections and the methods of work in this as in other divisions of the department.

Exhibition collections.—To the exhibition collection in systematic geology the following important additions were made, namely, a selected series of rocks illustrating the granite pegmatites of the eastern United States and their associated minerals; a remarkably fine series of crystal masses of rhodonite, from Franklin Furnace, N. J., the gift of Dr. W. S. Disbrow; an excellent large, polished specimen of copper conglomerate from Houghton County, Mich.; series of

tungsten ores from Idaho, gold and platinum ores from Nevada, potash alum from Esmeralda County, Nev., and ores of fluorine, phosphorus, chromium and zirconium from various localities; several large specimens of siliceous and calcareous sinter from the Yellowstone National Park, ten transparencies of characteristic scenery and a relief map colored to show the geology, all forming part of an extensive exhibit relating to this park, the preparation of which is now in progress. A rearrangement of the collections of meteorites, of oils and of the minerals used in steel making was taken up and completed for all except the first mentioned. Eleven relief maps, which have been in the department for many years, were renovated and their installation only awaits the construction of the necessary tables.

In the exhibition series of minerals certain inferior specimens were replaced by better ones recently received, and the case containing models of precious stones and artificial gems, noted in the last report as incomplete, was finished, sufficient specimens for this purpose having been found in the reserve collections. In building up the gem collection, it has been deemed advisable to establish a small series independent of the Isaac Lea Collection, in which to exhibit the rough material and cut stones side by side. It is proving very popular and is of high educational value.

The collections in invertebrate paleontology were also improved by the substitution of well preserved material for other withdrawn, the installation of series of fossil worms, ostracods and cirripeds, and the introduction of over 200 sketches in white on a black background depicting the structure of fossil forms, as it has been observed that the average visitor pays more attention to exhibits of fossils when they are supplemented by illustrations. No changes of importance were made in the hall of vertebrates other than those made necessary by the installation of the mastodon skeleton, which constitutes one of its most conspicuous and interesting features. This was placed on the north side of the zeuglodon in the position formerly occupied by the female mastodon, which has been moved to the south side. Two specimens were added to the exhibit of fossil turtles.

A more open and effective appearance has been given to the paleobotanical hall by the removal of the partitions or screens in several of the cases, and a rearrangement and careful selection of specimens. Plans are under way for increasing the interest of the collection by adding some large exhibits showing the occurrence of fossil plants in nature. The Carboniferous tree stump, with a spread of 10 feet, including the roots, secured last year was installed at the entrance to the hall. This, in connection with the very large fine Lepidodendron representing the upper part of a similar fossil tree, makes an excellent introduction to the paleobotanic series.

Explorations.—The expedition of Secretary Walcott to the Yellowstone National Park in the summer of 1915 resulted in the acquisition of a large and valuable collection of rocks and other geological materials. The primary object of the trip was the study of the hot spring deposits, of which a very extensive and complete series was obtained, besides a considerable quantity of sulphurs and volcanic rocks, which will enable the department to expand the existing collections to a full representation of the geology and mineralogy of that interesting region. This exploration was also extended to the Belt Mountains, where over a ton in weight of specimens of certain supposed fossil algal remains was collected from the pre-Cambrian rocks.

Dr. J. P. Iddings, during his explorations among the islands of the Indian and southern Pacific Oceans, obtained many specimens of volcanic rocks which will add very materially to the Museum collections, while the head curator, Dr. Merrill, visiting central Colorado during the summer of 1915 under private auspices, secured an interesting series of verde antique marbles, illustrating their derivation through the metamorphism of beds of siliceous dolomite.

Dr. W. T. Schaller, of the Geological Survey, and Dr. J. E. Pogue, of Northwestern University, were each given small grants to enable them to collect specimens of rocks and minerals illustrating the gem-bearing pegmatites of southern California and the emerald localities of Colombia, respectively, and from both of these important additions were received.

Dr. Wherry, assistant curator, made three short collecting trips. On the first he obtained a series of specimens bearing on the occurrence of glauberite, a large number of remarkable diffusion rings in red shale, and a few examples of the rare mineral chloropal. The second was in company with Dr. Schaller to certain gem and mica localities in Pennsylvania, where a number of specimens were secured, and the third to a newly discovered cave near Lurich, Va., where some unusual stalactitic formations were procured.

Mr. Frank Springer's private assistant, Mr. Herrick E. Wilson, spent a month of the field season of 1915 collecting echinoderms in the Niagaran formations of southeastern Indiana, and he also purchased for Mr. Springer certain collections of crinoids which had been made by others in that region, thereby assembling an exceedingly valuable lot of material. During May and June of 1916, Mr. W. F. Pate was employed by Mr. Springer to procure fossil echinoderms in the Silurian and Devonian of western Tennessee, and although a large number of specimens was not obtained the results were quite satisfactory.

Dr. Bassler and Mr. Resser were detailed in June, 1916, to collect specimens of fossil invertebrates and fossil plants suitable for exhibi-

tion purposes, in the Appalachian and Ohio Valleys, a work which had not been completed at the close of the year.

Through the liberality of a friend, Mr. Benno Alexander was sent with the Koren expedition to the Kolyma River region of northeastern Siberia to search for the remains of large extinct animals. This expedition left Seattle, Wash., in June, 1914, returning in September, 1915. A considerable amount of material was secured, consisting for the most part of disassociated bones, representing a Pleistocene mammalian fauna, of which 8 genera and about 11 species are distinguishable. These include the mammoth, bison, caribou, horse, rhinoceros, musk-ox, wolverine and wolf. Especial interest attaches to this find, as it is the first collection of fossil bones recorded from this region.

A second trip to Indiana for the purpose of completing the work of recovering the bones of the mastodon skeleton, elsewhere described, was made by Mr. Gidley in October. It resulted in securing the last of the missing sections of the vertebral column, several foot bones and other important fragments. Mr. Gidley was also enabled to study the conditions of original deposition of the skeleton. Incidentally he obtained information which led to the recovery of some important parts of the skeleton which had been removed before the National Museum took the matter in hand.

ARTS AND INDUSTRIES.

Textiles, woods, etc.—As noted in previous reports, in reestablishing the division of textiles it was found necessary to place under the same supervision certain other more or less kindred subjects relating to animal and vegetable products if any early progress were to be made in those directions with the very limited means available. One of these, wood technology, was organized as a section near the close of the fiscal year 1915, with an assistant curator in direct charge, and last year the division of medicine, which has lately been without an immediate head, was transferred to the care of the curator of textiles.

The year witnessed much activity in the subject of wood technology, the assembling of important collections from various regions and the formulation of plans for a thoroughly practical and popular exhibition. Efforts will be largely directed toward building up distinctive exhibits in the field of wood production and wood utilization, following the Forest Service classification of primary and secondary wood-using industries, the primary being those in which the raw material is received in the log, the secondary those in which manufacture begins with wood in other forms, such as brush back blanks, match blocks, chair stock, etc. As the present space will obviously not permit of the entire classification being covered in more than a very superficial way, operations will be restricted in the beginning to show-

ing such of the more important industries as can be accommodated with comprehensively worked up exhibits. Fortunately, the exhibits thus far obtained, with such others as have been positively provided for, represent a considerable variety of wood-using industries. The use of models will be made a prominent feature of the exhibition, among the subjects contemplated to be illustrated in this manner in the near future being the production of turpentine, the methods of logging in the spruce pulp regions, the manufacture of pulp and paper, the processes of impregnating timber to prevent decay, and the various types of mechanical logging machinery employed in the five typical lumber regions of the country.

It is considered especially important to bring together a comprehensive authentically identified series of foreign as well as domestic commercial woods. The importation from many parts of the world is extensive, but there is so much confusion regarding names and designations as to produce many provoking difficulties in connection with the trade. Such samples as are required for this purpose can not be obtained from the markets, but must be secured from original sources where they have been examined and determined by reliable scientific authorities.

In the matter of textiles many valuable and instructive accessions were obtained. Probably the most important was one received through the generosity of the American Thread Co., of New York, consisting of an extensive series of specimens and of models and sections of machines illustrating the manufacture of cotton threads, including photographs specially taken in the mills for the Museum of each machine concerned in their making, and a large number of specimens to show the many forms, sizes and packages in which threads are placed on the market. Each important machine connected with the production of a spool of such thread is represented by a photograph and a model or full-sized section of the machine itself. This material replaces a similar exhibit supplied the Museum in 1885 by the Willimantic Linen Thread Co., now a part of the American Thread Co.

Noteworthy among the additions to the exposition of methods of decorating textiles were a model 416-hook, double lift, single cylinder Jacquard machine, presented by the Crompton & Knowles Loom Works, of Worcester, Mass.; and a smaller 208-hook, single lift, Jacquard machine, contributed by Thomas Halton's Sons, of Philadelphia, which has been equipped with a lead weight attached to each of the neck cords, thus permitting, when the machine is operated, a demonstration of the rise and fall of these cords according to holes punched in the pattern cards. The Museum was again indebted to the Kursheedt Manufacturing Co., of New York, for specimens further representing the operation and work of the em-

broidery automats furnished by that company the previous year. Messrs. Cheney Brothers, of South Manchester, Conn., added to their already extensive gifts a collection of photographic reproductions of views relating to the manufacture of silk fabrics, and a series of 25 specimens illustrating the designing, weaving and printing of silk upholstery and drapery fabrics. A type of fabric decoration not heretofore shown in the collections was obtained for exhibition by the purchase from the Central Commission of the Netherlands and Colonies, Panama-Pacific International Exposition, of 22 specimens of Javanese batik work done on cotton and silk, and several enlarged photographs of the process employed. This is essentially a method of dyeing fabrics with successive colors by protecting portions of the cloth with a film of wax. A modification of this art with the use of improved tools is now being taught in some of the handicraft schools of this country.

From the Progressive Silk Finishing Co., of Hoboken, N. J., were received 13 samples of various patterns of moiré silks, which will form the nucleus of a case planned to illustrate this interesting method of decorating fabrics; while to the Japan Exposition Society, Panama-Pacific International Exposition, the division was indebted for two specimens representing the successive stages in the production of painted cut velvet, called by the Japanese "Yuzen Birodo." These latter are of value in showing the fabric as woven and before the wires over which the loops are formed have been withdrawn. The National Silk Dyeing Co., of Paterson, N. J., added 53 samples of silk skein-dyeing and silk piece-dyeing and printing to the already extensive series previously contributed. Messrs. Johnson, Cowdin & Co., of New York, prepared as a part of their exhibition at the Panama-Pacific International Exposition an elaborate design, called the "State Flower Bouquet," for a wide silk grosgrain ribbon. The original of the design for this interesting example of weaving was presented by the manufacturers, with a sample of the finished ribbon. Mr. Theodore Freund, through the Decorus Manufacturing Co., of New York, contributed an unusual scarf, spray-printed by means of the "airograph" or air brush.

Among the valuable exhibits donated by the commissions of several foreign governments to the Panama-Pacific Exposition was a collection of 100 commercial Japanese fabrics assembled and shown by the Bureau of Commerce and Industry, Department of Agriculture and Commerce of Japan, and presented by His Imperial Japanese Majesty's Commission. It includes many interesting examples of fabrics not produced in this country, particularly those ornamented by tying and dyeing, and with the use of specially printed yarns.

The collections of upholstery and drapery fabrics and allied textiles were greatly improved by the gift of new material by several American firms. The Orinoka Mills, of Philadelphia, contributed 18 specimens of silk, cotton, wool and mixed fabrics; Messrs. Sidney Blumenthal & Co., Inc., of New York, presented 13 samples of draperies and furniture coverings, and a beautiful Fortuna silk plush portiere; while, through the friendly offices of Mr. N. W. Doorly, eastern manager of "Good Furniture," the Museum is indebted to the Moss Rose Manufacturing Co., of Philadelphia, and to Messrs. Elms & Sellon and Mr. W. E. Rosenthal, of New York, for numerous examples of drapery and upholstery fabrics which were exhibited during January at the Avery Architectural Library of Columbia University. Messrs. Marshall Field & Co., of Chicago, added to the collection of printed cotton drapery fabrics contributed by them the previous year 26 examples of new designs prepared for the fall trade of 1916, and sent to the Museum several months in advance of their being placed on sale. The most of these represent a departure from the "realistic effects" so long used for this class of fabrics, and were originated by pupils of the Chicago School of Applied and Normal Art. From Mr. Edward Maag were received 24 samples of upholstery and drapery trimmings manufactured by him in New York.

Several American manufacturers have assisted in keeping the fabric collections of this division supplied with novelties and with new types and designs of dress fabrics as soon as they have been brought out. Among this group of cooperators should be mentioned the Valentine & Bentley Silk Co., of New York, which furnished 5 samples of printed "Mayflower" silks; Messrs. H. R. Mallinson & Co., of New York, 7 samples of "Pussy Willow" taffeta printed in State Flower designs; the Oriental Silk Printing Co., of Haledon, N. J., 5 samples of printed novelty silks; the Sussex Print Works, of Newton, N. J., 4 samples of silk dress goods printed with designs adapted from the crest of the Bolling family; Messrs. A. H. Strauss & Co., of New York, a sample of printed lining silk, the design of which is entitled "The Suffrage Victory"; Messrs. William Alford & Sons, of New York, a sample of yarn-dyed novelty silk called "Puppy Skin"; and Mr. William M. Poz, of New York, a specimen of pure-dye silk dress goods named "Silkskin."

Through the generosity of Mr. B. P. Rideing, of New York, the Museum received 7 examples of novelty coatings and pile fabrics, especially brought out to meet the demands for skating costumes so much in vogue during the past winter. The Victory Silk Co., of Paterson, N. J., presented 7 samples of their men's silk suitings, designed to supply a call for new types of light-weight all-silk fabrics.

The collection of ribbons was increased by 10 samples of apple green silk, including warp-printed, brocaded, moiré, grosgrain, satin

and taffeta weaves, the gift of Messrs. Smith & Kaufmann, of New York. Specimens of machine-embroidered net flouncings and of Plauen metal lace, showing the use of tinsel threads in the manufacture of dress trimmings, were secured for the lace and embroidery section through the kindness of the Einstein-Wolff Co., of New York. The Quaker Lace Co., Inc., of Philadelphia, added to their previous donation 16 samples of machine-made window laces produced on the Nottingham lace curtain and levers go-through machines. From the Niagara Silk Mills, of North Tonawanda, N. Y., were received 4 samples of knitted tricot and Milanese glove-silk fabrics, dyed and printed in plain and Waldorf stripes.

To Mrs. Frederick Marsh, of Washington, acknowledgments are due for the loan of an old Spanish lace scarf made in Salamanca, showing likenesses of their Catholic Majesties, Ferdinand and Isabella. The gift by Mrs. John Russell Young, of Washington, of an elaborate piece of native embroidery work from Benares, India, two collars done in French hand embroidery, and a pair of tiny gloves knitted in China, made an attractive addition to the collection of artistic needlework. Miss Catherine Brittin Barlow, of Washington, contributed a lady's silk embroidered apron, a good example of modern Chinese needlework.

The Philippine Board for the Panama-Pacific International Exposition, through Mr. Frank L. Crone, director of education for the Philippine Islands, presented a most interesting educational exhibit entitled "Fibers from the growing plants to the finished products," showing some excellent examples of handicraft work done in the Philippine schools. There was also obtained by purchase from the government of the Philippines a collection of specimens illustrating some of the best examples of needlework and basketry done in the Philippine Public Schools, assembled by the Bureau of Education, Department of Public Instruction, at Manila.

The more important accessions other than textiles and woods were as follows: A large number of miscellaneous agricultural products from the Chinese Provinces of Anhui and Kiangsi, presented by The Republic of China Commission to the Panama-Pacific International Exposition, through the Hon. Chen Chi, commissioner; a selection of teas, coffee, spices, resins, drugs and miscellaneous agricultural products from its extensive exhibit at San Francisco, contributed by the Central Commission of the Netherlands and Colonies to the same exposition, through Mr. F. L. W. MacDonald, acting commissioner of the Netherlands East Indies; and 28 specimens of named varieties of cereals in the sheaf and 5 large photographs framed in Australian woods, furnished by the Australian Commission, through Mr. George Oughton, secretary. To the Oregon State Commission, through Mr. Oscar E. Freytag, chief of agriculture, the Museum is indebted for

an excellent specimen of the teasel plant as grown in the field and a sheaf of Oregon flax in the seed.

His Imperial Japanese Majesty's Commission to the Panama-Pacific Exposition presented, through Mr. H. Yamawaki, commissioner general, a beautiful lacquered tray made by students in the Technical School of Ishikawa, specimens of whalebone and whale ivory from the Imperial Fishery Training School, a large model showing methods of fishing and fishing boats used in Japan, from the Bureau of Fisheries, and a number of samples of agricultural products shown by various exhibitors. From the Japanese Exposition Society, acting for the Japanese manufacturers and other non-official exhibitors at this exposition, there were obtained by purchase samples of wood splints, chip braids and mattings, a pearl shell containing a culture pearl in situ, and 10 specimens of long green timber bamboos such as are used for building construction in Japan.

Dr. Riley D. Moore, of the Museum staff, lent a most interesting collection of walrus and mammoth ivory gathered by him in Alaska. This had been worked up by the Eskimos for jewelry mountings from pieces of fossil ivory and broken tusks dug from the sands along the beach. From Messrs. H. Liebes & Co., of San Francisco, Cal., were received as a gift 8 mink skins illustrating methods of forming furs for articles of wear, each specimen showing one half of the skin natural size, and the other half elongated and shaped for some particular use by an intricate method of cutting and sewing. The estate of Mrs. Fannie Brown Putnam, through Miss Fannie A. Morrison, executrix, of Nashua, N. H., contributed 23 samples of human hair work made by Mrs. Putnam between 1870–1880, which, with the examples already in the Museum, furnish a very good representation of this almost lost art.

An important addition to the section of materia medica, a gift from the Lederle Antitoxin Laboratories, Pearl River, N. Y., consisted of a collection of typical packages of manufactured biological products, including antitoxins, serums and vaccines. To Messrs. Eli Lilly & Co., of Indianapolis, Ind., acknowledgments are due for a series of empty gelatin capsules in various colors and sizes, and a sample of the sheet gelatin used in their manufacture. Through the generosity of the Commissariat Général du Gouvernement Français a l'Exposition Universelle de San Francisco the Museum was able to obtain several interesting examples of pharmaceutical products and a series of by-products from the abattoirs of the city of Paris.

The additions to the section of wood technology aggregated 689 specimens, received in 27 accessions, and having been obtained principally for exhibition purposes, they are as a whole of educational

rather than scientific value. One notable exception in this respect is presented by a collection of Philippine commercial woods purchased from the Philippine Board of the Panama-Pacific International Exposition, which consists of 110 pieces in board form, each 6 feet long and from 6 to 30 inches wide. The work of assembling and identifying these was done by the Philippine Bureau of Forestry and it is felt that the data supplied regarding them are of a reliable scientific nature. Every commercial wood of importance in the Islands is included, some in duplicate to illustrate the different characteristics of grain and figure possessed by the same species. In all, 29 botanical families and 85 species are represented. The boards have been surface-finished and are to be installed against the east wall of the court allotted to the section, where they will make a striking display.

The Comision Argentina of the same exposition, through the vice commissioner general, Mr. Enrique M. Nelson, presented 16 pieces of the important commercial woods of that country, representing 15 species. They were collected by the Forest Service of the Argentine Republic and are accompanied by thoroughly accurate information. The specimens are also in board form, from 4 to 10 feet long, and surface-finished.

As a gift from the Astoria Veneer Mills and Dock Co., of Long Island City, N. Y., were received 32 samples of foreign woods highly prized for the manufacture of veneers and for cabinet and furniture work. Among them are the important varieties which are imported into this country under the trade name of mahogany. It is felt that a collection of commercial mahoganies, aside from its general interest and value, will be found useful to the Government in the purchase of reliable material. All of the specimens with one exception are over 6 feet in length; in the shape of boards, they have been surface-finished in the Museum shops.

The California Redwood Association contributed 38 specimens of redwood lumber, representing a large variety of patterns produced by the redwood lumber manufacturers and also some of their better grades of plain lumber. Included in the gift is a handsome, 6-foot, burled redwood board about 25 inches wide, and a plank 13 feet long and over 4½ feet wide. These two specimens well illustrate the exceptional beauty and large size furnished by this valuable wood, long popular for a multitude of purposes on the west coast and in recent years commonly encountered in the eastern markets.

A noteworthy and instructive exhibit of the naval stores industry was collected for the Museum by the U. S. Forest Service, through Mr. Inman F. Eldredge, supervisor of the Florida National Forest. Three butt sections of longleaf pine from a commercial turpentine orchard, illustrating the manner in which gum for the distillation

of turpentine is obtained by the box, the cup and gutter, and the Forest Service methods of turpentining, respectively, are particularly interesting in that they show clearly the progressive improvement evolved in this part of the industry from the former wasteful and destructive process to the modern economical method of the cup and gutter, and that practiced by the Forest Service in the forests under its supervision. Samples of gum, scrape, turpentine and rosin, and examples of the tools used in scarifying the trees form part of the exhibit. Constructed in the Museum shops for installation with these specimens is a model of a typical turpentine still such as is frequently used throughout the longleaf pine belt. The still, with its outbuildings, is in a setting typical of the region, and is surrounded by longleaf pine trees, some of which are boxed and others provided with cups and gutters in accordance with the usual practice. Though not an actual reproduction of an existing still it is sufficiently accurate for its purpose.

From the Stamford Manufacturing Co., of Stamford, Conn., were received 4 specimens of dyewoods in the log, and a series of extracts made from them, logwood, fustic, Brazil wood and quebracho, the latter important chiefly for its tannin extract, being represented. Instructive series of specimens showing the materials and successive stages in the manufacture of the several articles named were presented as follows: A tennis racket, of white ash, walnut and Mexican cedar, and a golf driver, with the head of persimmon and the shaft of hickory, by the A. G. Spalding Brothers Manufacturing Co., of Chicopee, Mass.; bowling balls from lignum vitae and tenpins and duckpins from hard maple, by the Brunswick-Balke-Collender Co., of New York; cigar boxes from Spanish cedar, by the Henry H. Sheip Manufacturing Co., of Philadelphia; and tobacco pipes from western red gum, by Mr. William Keffer, of the same city.

An excellent beginning was made toward covering the great match-making industry through the gift from the Diamond Match Co., of New York, of a comprehensive exhibit illustrating the manufacture of non-poisonous matches, from the "blank" block of white pine to the finished match, and also the steps in the making of paper box containers and the chemicals used in impregnating and treating the match sticks.

The Hawaii Hardwood Co., Ltd., of Honolulu and Pahoa, contributed one board each of koa and ohia woods, 6 feet in length. The specimen of koa is a beautiful example of figure frequently found in this highly prized cabinet wood. The Gum Lumber Manufacturers' Association, of Memphis, Tenn., presented a fine large board of red gum; The Louisville Veneer Mills and this Association, a finished panel of quarter-sawed red gum veneer, figured and matched for design; and the Hardwood Products Co., of Neenah, Wis., through

the same Association, an excellent example of red gum, made into a built-up model door. Four large specimen boards, one each of Honduran mahogany, yellow poplar, white oak and black cherry, all over 10 feet long, were purchased.

An interesting exhibit from the Novelty Turning Co., of Norway, Me., illustrates the various stages in the manufacture of a sadiron handle made of white birch; while a similar one from the National Handle Co., of Cleveland, Ohio, covers the making of a pitchfork handle, from the raw billet of ash to the finished article. The Ox Fibre Brush Co., of Frederick, Md., presented a very complete and comprehensive series of specimens showing the processes and materials employed in the brush industry.

It was necessary to rearrange the floor cases in the east south textile range several times during the year to permit the placing of special exhibits and to accommodate a number of additional cases, besides providing space for recent acquisitions of lace and needlework. Certain changes in the south hall resulted in marked improvement. These included a new installation of the exhibits of raw, thrown and spun silk, the spun silk series being transferred to a case painted dead black inside to conform to the other cases illustrating silk processes. New exhibits relating to warp-printing, wax resist dyeing and the manufacture of cotton thread were added. A reinstallation of several sections of the wall case on the gallery of the southwest court with new material was accomplished, and a beginning was made with new exhibits on the north side of the gallery of the southeast court. The latter gallery was repainted, and the old furnishings left by the department of geology were replaced by racks and shelves. As the space assigned to textiles is becoming crowded, it has been found necessary to remove many specimens to storage as new exhibit material is received, and also to abridge the quantity of material shown in several of the series. The arrangement of the reference collection of small samples of named fabrics is progressing steadily. These samples are mounted on standard letter-size cards and filed in regular office filing cases.

The floor area of the southeast court, which has been allotted to the exhibition collection in wood technology, was in course of preparation for that purpose at the close of the year, and some progress had been made in the arrangements for installation, much of the larger material already acquired having been assembled there. While this space is quite inadequate for representing the wood industries in all of their ramifications, it is felt that a beginning can there be made sufficiently diversified and instructive to prove the value of such an exposition and justify measures for securing its expansion. Experiments were also undertaken looking toward methods of installation, which, in view of the nature of most of the

objects, and especially the large and varying size and shape of wood samples, must differ in many respects from those employed in other branches of the Museum, and some seemingly satisfactory results were obtained. Fixtures conforming to these needs were being constructed, and the work of arrangement was expected to proceed from the beginning of the current year.

Progress was made in the compilation of terms and definitions for the textile glossary, begun in 1913, which has already proved very useful in cataloguing new materials received for exhibition, as well as in answering the numerous requests from correspondents for definitions and identifications of fabrics. It is hoped that this work may, before long, be put into shape for publication.

The curator, Mr. F. L. Lewton, continued his investigations of the botanical relationships of the species of cotton and the history of their introduction into the United States; and also his researches, commenced several years ago, on the classification, properties and uses of gums and resins, on which subject he has prepared a manuscript for publication. He likewise identified the cottons introduced by the Office of Foreign Seed and Plant Introduction and Distribution of the Department of Agriculture, and collaborated with other members of the Botanical Society of Washington in the preparation of a "Flora of Washington," furnishing the pages dealing with Malvaceae. A paper on "The installation of textile fabrics" was read by him at the eleventh annual meeting of the American Association of Museums, held in Washington in May, 1916. Assistance was rendered from time to time to several Government bureaus and numerous individuals in determining specimens of gums, resins, seeds and fabrics. Many classes and groups of scholars from public and private schools in Washington and its vicinity were given lectures and demonstrations or informal talks by the curator on the textile collections and on spinning and weaving.

From July 31 to September 8, the curator was detailed to the Panama-Pacific International Exposition as assistant representative of the Smithsonian Institution in connection with the Government Exhibit Board. In addition to his regular duties, he was able to give a large amount of time to a study of the exhibits in manufactures and the industrial arts, and by conferences with the commissioners of a number of foreign countries and of several States, as well as with private exhibitors, he was successful in influencing the gift to the Museum of much desirable material. He assisted in the installation of the special loan exhibitions of The American Federation of Arts held during the year, from which 9 valuable textile accessions were secured. Two trips to textile centers also resulted in several of the more important acquisitions of the year. The section of wood technology was likewise greatly benefited by visits

made to several places by Mr. G. de S. Canavarro, assistant curator in charge of that section.

Mineral technology.—As in previous years the efforts of this division were entirely focused on the designing and preparation of exhibits visualizing the technology and economics of the various mineral resource industries. Established with special reference to the enhancement of popular conception regarding these matters, its work has so far wholly tended in the direction of developing an exhibition series which for all the important minerals shall set forth in a manner to be understood by the layman, the conditions of their occurrence in nature, the operations followed for their extraction, the processes of manufacture, and, in fact, all the stages in the history of each from the time of its quarrying until its several products enter into commerce and use.

That the exhibits may accomplish their purpose with the thoroughness demanded by the traditions of the Institution requires that they be comprehensive, embodying every important detail, and yet be so readily interpreted as clearly to serve the object of popular education. In order to faithfully carry out this intention it is first necessary in each instance to reach a perfect understanding of every phase of the industry, even though only typical illustrations may finally prove feasible, and to plan for the nature and extent of the demonstration. This takes time, and even more time is requisite for the assembling of the exhibit, especially when the main part of the demonstration must be effected through the instrumentality of models, this form of illustration being always the most effective and instructive when it can be used, but in all cases it has to be supplemented by other features. Flat graphic representations, including illuminated photographic reproductions, are among these, but there is nearly always demanded a more or less extensive series of specimens, not so much of the raw materials as of the products derived not only as the ultimate resultatives but also those of the side processes, as in the many known instances connected with coal.

In this work the Museum has received hearty cooperation from many of the principal producers of the country, some of whom have actually furnished a greater or less part of any given exhibit, while others have supplied the means and the plans for carrying out the scheme of presentation of their particular industry. In a few directions, however, all efforts to enlist collaboration have so far failed, with the result that certain interests of the greatest importance are not only not represented, but have received no encouragement from without. In its purpose to bring about an educational exhibit which shall present typical conditions, and treat of them comprehensively and exhaustively, not only is it expected to enlighten the public generally but also to place the people in closer and more appre-

ciative relations with the industries which are so fully linked with their welfare, and the industries themselves would seem to have as much to gain by these efforts as the public. In fact, the Museum display can not be considered apart from the industries themselves, on whose continued support depends their maintenance and their further development with the advance in improvement of methods and products.

Progress has also been hindered by the inadequacy of the funds available on the part of the Museum to secure the amount of skilled assistance necessary to take full advantage of the opportunities, and yet comparatively little additional means would be required to bring about a condition much more commensurate with the importance of the subject.

Numerically, the collection is not expected ever to be large, though from the character of the presentation of topics it must naturally cover considerable space. Its assembling is a matter of selective judgment, and the lesson will be best given when in a form to be most readily comprehended. Circumstances have so far prevented the preparation and issuance of descriptive matter on the exhibition, which is intended to be taken up separately for each mineral product, and which, using the exhibit as the basis of the theme, will cover succinctly all phases of the industry, a method of disseminating its teachings the value of which must be apparent to all. Even though still lacking in the presentation of a number of the important mineral industries, and more or less incomplete in those which are represented, it is believed that the division's efforts have already resulted in an exhibition which is well worthy of consideration and may be studied with great profit.

Among the accessions of the year, which in the aggregate exceeded in value for the purposes of the division those of any previous year, six were of special importance. Prominent in this group is one constituting a visualized treatise on the origin, occurrence, treatment and uses of the asphaltic bitumens. It will shortly be supplemented by a number of additional features under preparation, but as it stands it comprises a model of Trinidad Asphalt Lake and its environs, a series of 14 colored transparencies 16 by 24 inches and upward, 8 photographic enlargements measuring about 4 by 6 feet, and a complement of specimens typifying the different forms of asphalt occurrence and the useful products prepared therefrom. The model occupies a floor space of 120 square feet and is a masterpiece of realism in the faithfulness of its depiction of actual conditions. The exhibit in its entirety is the gift of the Barber Asphalt Paving Company.

An addition which, when fully installed, will be surpassed among the year's contributions only by the asphalt exhibit, is a complete

ore stope removed bodily, ore faces, timbering, chute, manway and all accessories, from the Copper Queen Mine at Bisbee, Ariz., the gift of Phelps, Dodge & Co., of New York. The third accession to be mentioned is a model representing the lay-out of a Portland cement plant and the sequence of operations connected with the manufacture of that most important commodity, from plans provided by the Atlas Portland Cement Co. A significant acquisition consisted of an industrial series covering the occurrence and uses of natural graphite, among the individual specimens being a very remarkable block of pure natural graphite weighing 250 pounds.

Received by transfer from the Geological Survey were three models, previously exhibited at the Panama-Pacific International Exposition, one of which reproduces the unique method of mining placer gravel for gold in the frozen North by a system of underground drifting or tunnelling bed rock, with the ground thawed out in immediate advance of the tunnel by means of steam. Another valuable contribution to the gold exhibit, presented by the Pacific Tank & Pipe Co., of San Francisco, is a model of a cyanide leaching plant showing admirably the method commonly employed in the extraction of gold from its ores where the metal does not lend itself to simpler and more direct processes for its segregation.

During the year the mica, asbestos, graphite and Solvay Process soda exhibits were brought to completion, and the gypsum exhibit nearly so. The generous contributions from the Barber Asphalt Paving Co. permitted consistent progress in the direction of securing a thoroughly satisfactory bitumen exhibit as an event of the near future; and the good offices of the Atlantic Refining Co. resulted in the assembling of a mineral oil exhibit, as did also those of the Atlas Portland Cement Co. with reference to Portland cement. Both of these include models on a comprehensive scale whose construction in the division represents achievements of the year. With the glass and coal products exhibits, both of which were in an advanced state of development at the outset of the year, unfavorable circumstances prevented any progress. The efforts made to secure materials for an appreciative comprehension of the iron and steel industries also proved unsuccessful. On the other hand, with regard to copper, which has given rise to an industrial field second only to that of iron and steel in magnitude in the metallurgical group, the producers have welcomed the opportunity of helping the public to an adequate acquaintanceship with what is being done toward maintaining the supply of this metal. Backed by this public-spirited attitude, the division is enabled to announce the commencement of work on a copper exhibit which will reflect alike to the credit of the Museum and of the industry.

Presentations of the occurrence, mining and metallurgy of zinc and lead, and of the properties and uses of these metals, which it was hoped would be furnished during the year, still remain unfinished. The delay in the case of lead was caused by successive enlargements in the scope of the exhibit, which has been under preparation for a year and a half. Another exhibit the acquisition of which has also been delayed is a working model of salt works. One made by the donors, the Worcester Salt Co., and intended to be given to the Museum, took the grand prize at the Panama-Pacific International Exposition, but, falling short of the ideas entertained by the president of the company, Mr. Lorenzo Benedict, the plans were redrawn and work started on a new model which, in addition to reproducing in miniature the procedure of salt mining and refining, will constitute a most remarkable example of mechanical ingenuity executed by the designer, Mr. F. W. Wood.

Following is a brief general review of the exhibits completed and in progress, and to some extent of those contemplated, in the four halls of the division, which comprise the entire floor space of the southwestern quarter of the older Museum building. The west hall, opening from the central rotunda, with an area of about 6,300 square feet, is assigned to the exhibits covering the metals gold, silver, copper and tin. Of the last named there is a relatively complete presentation of the known sources to which the world may look for its supply of this important metal, the mode of occurrence typical of the ore, and the procedure involved in the extraction of the metal, together with the present economic situation with reference to tin in the United States. Of gold and silver there is yet little to be seen, though a very important special type of gold mining, that of placer working in the frozen ground of Alaska, is well portrayed in a realistic model. Conspicuously attracting attention is a large model in process of construction, which marks the beginning of work on the copper series, and in its complete condition will faithfully depict the operations of the Utah Copper Co. in Bingham Canyon, Utah, which in engineering magnitude and economic significance represent one of the greatest achievements of modern civilization.

The range leading south from the above hall on the west side of the building, containing over 3,000 square feet of space, is devoted to glass manufacture, abrasives, lead and zinc. Most prominent on entering is a glass works exhibit showing the two standard glass-making furnaces, ingeniously illuminated from within to represent them in full blast. With the help of lay figures, the various successive steps in the manufacture of typical glassware articles have been visualized so adequately that descriptive labeling is superfluous, and the visitor sees exactly what he would find were he to visit some large

glass-making establishment. Moreover, he views the layout much more comprehensively because of the fact that he is able to grasp the entire procedure in proper relationships, rather than as a confusion of apparently independent units. A series of specimens by their selection and arrangement indicate the composition of the different commoner varieties of glassware, the various stages in their manufacture, and the status of the industry in the United States.

The value of abrasives for sharpening cutting implements is a matter of universal knowledge, but relatively few people are fully aware of the part they play in the ever-widening circle of requirements. In this respect, the exhibit of abrasives, both natural and artificial, is apt to prove a revelation to the visitor as he turns to it from the model glass factory. Consisting of both specimens and illustrations, it aims to familiarize the layman with the many types of abrading materials and to teach that what is adapted to one purpose may be wholly inefficient for another. Without abrasives, not only would keenness of cutting edges be unknown, but so also would machinery, and without present-day refinements in abrasive preparation, the refinements of machine efficiency would suffer proportionately. As before explained, the lead and zinc exhibits are not yet completed.

The third hall, also a range on the south side of the building, with over 4,450 square feet of area, is allotted to the non-metallic minerals, notably the cement-lime-plaster series, the salines, bitumens and mineral oils, together with asbestos, mica and sulphur. The world is sometimes referred to as now living in a cement age, and considering the part played by cement in road building, bridge construction and structural work in general, with the progressive elimination of the lumber availabilities, the allusion is not altogether without foundation. Moreover, except for wood, nothing enters more intimately into the fabric of life comforts than do cement, lime and plaster, and it is not only interesting, but of vital importance that the householder should know something of the properties possessed by the various members of this group. Three carefully constructed models visualizing the occurrence of raw materials and the manufacturing process involved in the preparation of each, accompanied by specimens, serve to indicate the relative desirabilities for use, especially around the home, though the illustration of this subject as planned is still incomplete.

The bitumens, which are all important in connection with the construction and maintenance of the country's highways, are represented by an exhibit which serves to explain to the visitor just what bitumen is, in what different guises it occurs naturally, or is prepared artificially, what its properties are, to what uses it has been put, and

the relative value of the resultant products. A model of a portion of Trinidad Island, containing the famous Pitch Lake, which is America's chief source of natural asphalt, as well as a most remarkable natural scenic wonder, affords a faithful reproduction in every detail of form and color.

Everyone is interested more or less directly in gasoline and in the various other refinery products from petroleum, and a comprehensive mineral oil exhibit must therefore carry an important lesson. Such an exhibit is under preparation, but at present the visitor will see only a model showing the several conditions under which oil accumulates in pools beneath the earth's surface.

The salt exhibit visualizes the complete history of this ever-present article of food on the dining table. But common salt is more than a condiment, as it is the basis for the manufacture of soda and the ever-ramifying products into which sodium compounds enter. In this latter direction lies a very important industrial development, perhaps the most independently and truly American of any of our industries, which is also reproduced with a direct simplicity of representation, in the form of a model showing the geological conditions, the processes of obtaining and utilizing the salt, etc., accompanied by photographic enlargements, and samples of the raw and finished products.

Within the memory of the present generation, practically all of the sulphur used in the United States was imported. To-day, however, not only is essentially all of the consumption supplied from domestic sources, but there is a very considerable annual exportation as well. Sulphur deposits of practically unlimited extent have been known to exist in the Gulf region, but were too deep-seated to be commercially available through the regulation mining methods. The evolution of a process whereby the sulphur might be melted and brought to the surface as a liquid was the cause behind the complete reversal in the economic situation. A model serves to show almost at a glance the occurrence of the Gulf region sulphur deposits, and the workings of the process for which this vitally important change is responsible.

The so-called minor minerals have not so far received even a small part of their just share of consideration from American enterprise. The mention of an oil strike, a gold, silver or copper deposit, or perhaps a coal bed, finds receptive ears, but enthusiasm over a mica-bearing property is an experience unknown in this country. With the constantly widening range of human needs, however, the demand for many of these lesser economic minerals has come to assume significant proportions, and the development of American resources in them would be an extremely valuable asset. Asbestos

and mica are typical illustrations of the case in hand, and the exhibits covering the occurrences, uses and economic aspect of these two minerals, merit more than a passing notice by the visitor.

The country's coal resources constitute the backbone of its economic existence, and accordingly an entire hall, the southwest court of the building, has been devoted to the carbon series. The exhibit starts with a graphic representation showing the evolution of coal from vegetable accumulations through the successive stages of peat and lignite, through the true coal series to anthracite coal and even graphitic anthracite, to the final state of pure graphite. Following this another similar representation brings out the relative amount of coal contained in the various countries of the world and the different States of the United States. Each successive member of the carbon series has the story of its occurrence and economic possibilities as well as realities unfolded in proper sequence. Special stress is laid upon the bituminous coal products, for which the need in the way of an American supply has been grievously apparent during the past few years. While these series are displayed in wall cases along the sides of the court, the floor space is occupied by models illustrating the occurrence and mining of coal. One of these is a working model covering 1,500 square feet, in which all of the operations connected with the mining, grading and cleaning of coal, together with the manufacture of bee-hive coke, are shown in actual progress.

The United States has a number of graphite deposits, but they are of inferior grade, and by far the larger portion of the natural graphite used is imported. Consequently, an important contribution toward the economic independence of the country was made not many years ago, when, as the result of the discovery by Dr. Acheson, an American industry, based on the artificial preparation of graphite, was developed. Graphite, like most other economic minerals, has a much wider range of usage than is generally supposed, and the curtailment of the supply would prove serious in many unexpected directions. The exhibition series, covering both native and synthetic or Acheson graphite, centers around the interest which attaches to graphite manufacture as an American industry, and also around the importance of this industry to human well-being.

DISTRIBUTION AND EXCHANGE OF SPECIMENS.

The distribution of duplicates to educational establishments, mostly to schools and colleges for teaching purposes, aggregated 7,157 specimens, all accurately identified and labeled. Of these 5,740 specimens were comprised in regular series as follows: 19 sets of recent mollusks, containing 174 specimens each; 26 sets of fossil invertebrates, of 42 to 54 specimens each; 12 sets of minerals and ores, of 85 and 86 specimens each; and 1 set of rocks, minerals and ores, of 73 specimens.

The remainder were distributed in 38 special sets and consisted of representatives of all the principal branches of the collections in anthropology, biology, geology and paleontology, including 200 pounds of geological material suitable for blowpipe analysis.

In making exchanges for additions to the national collections 9,368 duplicates were disposed of, classified as follows: Anthropological, 1,665; zoological, 723; botanical, 5,181; geological, 1,146; paleontological, 653.

One hundred and fourteen lots of specimens were sent for study to collaborators of the Museum and other specialists living away from Washington. Besides a large quantity of unsorted material, chiefly of marine invertebrates and fishes, they comprised 9,297 specimens, of which 12 were anthropological, 77 mammals, 347 birds, 75 reptiles and batrachians, 18 fishes, 1,397 insects, 1,805 marine invertebrates, 4,812 plants, 97 minerals, rocks and ores, and 657 fossils.

NATIONAL GALLERY OF ART.

The permanent acquisitions by the National Gallery of Art consisted mainly of additions by Mr. Charles L. Freer to his munificent donation of American and oriental art, and of a large series of drawings by contemporary French artists.

The increment to the Freer collections aggregated 535 items. Abbott H. Thayer, Willard L. Metcalf and J. Francis Murphy, American artists, were each represented by an oil painting; Dwight W. Tryon, by 18 pastels; and Augustus Saint-Gaudens, by the two large bronze sculptures known as the "Library Groups," designed for the Boston Public Library. Among the last works on which this sculptor was engaged and unfinished at his death, these represent "Labor Supported by Science and Art" and "Law Supported by Power and Love." Of oriental paintings there were 13 panels, 55 kakemono, 11 makimono and two albums of 6 and 12 paintings, respectively, all Chinese with the exception of a set of 3 Japanese makimono; of oriental pottery, 32 pieces, of which 29 are Chinese and 2 Corean, while 1 is attributed to Tibet; of bronzes, 292 examples, 288 being Chinese, 3 Corean and 1 Japanese; and of Chinese jades, 51 pieces. Belonging to other classes were stone sculptures and carvings; iron, pewter and silver work; lacquer, glass, ivory, fabrics, etc., all except one of Chinese origin.

Those who have taken interest in the development of this marvelous collection will be pleased to learn, from an announcement by Mr. Freer, that considerable headway has recently been made in the preparation of classified records of the oriental subjects, which entail extensive researches, and the catalogues as they are finished and published will be found to contain important contributions to knowledge. A number of experts have rendered help in the various branches,

and in the Chinese department, which is the most difficult from every point of view, assistance is being sought from experienced students in Europe and the Far East, as well as in America.

Mr. Frederick W. Gookin, of the Art Institute of Chicago, and his assistants have completed the descriptive catalogue of the Japanese paintings; Mr. Langdon Warner, of Boston, has catalogued the Chinese and Japanese wood and stone sculptures; while Mr. Dana H. Carroll, of New York, has catalogued the Mesopotamian and Corean potteries and is now engaged with the Japanese potteries. Mr. Laurence Binyon, of the British Museum, has given important aid in connection with the Chinese paintings, one of which has already been made the subject of a descriptive paper soon to be published. Prof. Edmund Trelawny Backhouse, the eminent English-Chinese scholar, of King's College, London, while helping to secure specimens for the collection, is also deciding difficult problems in Chinese chirography. Dr. Berthold Laufer, of the Field Museum of Natural History, Chicago, who has long been deeply interested in the collection, is contributing splendidly toward the unraveling of knotty questions, while Miss Katharine N. Rhoades is associated in research and descriptive work connected with the different departments.

The most gratifying occurrence of the year in respect not only to the Gallery but to the general interests of the Institution as well consisted in the decision and the taking of the preliminary steps to begin at once the erection of the building for housing the Freer collections. It will be recalled that in the original agreement between Mr. Freer and the Institution, entered into in 1906, these collections were to remain in the donor's possession in Detroit during his life, and only subsequently was the building to be constructed and the collections moved to Washington. The building fund, also provided by Mr. Freer in the same deed of gift, was then fixed at $500,000, but, owing to the very great increase in the size of the collections and the increased cost of building operations, Mr. Freer later announced that this fund would be doubled.

In the autumn of last year Mr. Freer, waiving the conditions as to time of transfer, expressed the desire that the building construction be taken up forthwith, and in December he turned over to the Institution the sum of $1,000,000, the amount he had appropriated for this purpose.

Plans for a building adapted to the requirements of the collections and to the objects which the donor has had in view in providing for their maintenance had for some years occupied the attention of Mr. Freer, and finally through the services of Mr. Charles A. Platt, the well-known architect of New York City, a structure has been designed which, suitable in every detail to its purposes, presents an exterior both dignified and pleasing. Measuring 228 feet in frontage

by 185 feet deep, it consists of a single main story above a high basement. The former, having an open central court about 65 feet square, is divided into rooms of different sizes, all of which will be used for exhibition, while the latter contains ample studios, storage rooms, an auditorium and administrative offices.

The site is on the Smithsonian reservation at the corner of 12th and B Streets, southwest, between the Smithsonian building and the east wing of the building of the Department of Agriculture. With its main or north front on the building line adopted for the southern side of the Mall, this new structure will stand some distance back of the Smithsonian building and 73 feet to the westward of its western end. An important advantage of this position is that the height of the adjoining buildings is not such as to dwarf its dimensions, a danger to be anticipated in surroundings not already permanently occupied. The exterior material will be a pink granite, furnishing a color intermediate between the brownish-red sandstone on the one side and the white marble on the other.

The location and the preliminary plans, the former selected by a committee of the Board of Regents of the Smithsonian Institution, received the approval of the Board and of the national Commission of Fine Arts, and at the close of the year matters relating to the details of construction were under consideration. It is expected that about 2½ years from the time of beginning operations will be required for the completion of the building and its preparation for the collections, the installation of which may, therefore, be expected to take place the latter part of 1919 or early in 1920.

In July, 1915, there was received from the Department of State a collection of 82 drawings in pencil, pen, charcoal, chalk, crayon, water color, etc., executed by eminent contemporary French artists and presented to the people of the United States by the citizens of the French Republic as a token of their appreciation of the sympathetic efforts of American citizens toward relieving the distress occasioned by the European War. This notable series of pictures, all of which are inscribed and signed by the artists, has been installed in the alcove at the northern end of the hall containing the paintings of the National Gallery of Art. The list, which follows, discloses the names of many painters, sculptors and engravers, which have long been known to all lovers of art in this country.

LIST OF PICTURES BY CONTEMPORARY FRENCH ARTISTS.

Jules Adler. Figure of an old man. Crayon.

Georgette Agutte (Mme. Marcel Sembat). Ancient castle. Water color.

J.-Francis Auburtin. Children at play. Water color.

Joseph-Marius Avy. Head of a girl. Charcoal.
Joseph Bail. Lace making. Crayon.
Paul-Albert Baudouin. Female figure dressing hair. Red chalk.
Paul-Albert Besnard. Three heads. Pen.
Léon Bonnat. Portrait of Ferdinand de Lesseps. Pencil.
Louis-Henri Bouchard. Carrying the wounded. Pencil.
Joseph-Félix Bouchor. "Premier drapeau pris à l'ennemi. Drapeau du 132e d'infanterie, 1er regiment de Basse-Alsace, Strasbourg. Pris le 15 Août, 1914, à St. Blaise par les chasseurs à pied." Water color.
Mlle. Louise-Catherine Breslau. Schoolgirl. Charcoal.
Eugène Burnand. Old woman. Crayon.
Antoine Calbet. Greeting—two female figures. Crayon.
Carolus Duran. Sketch of a lady. Pencil.
Jules Cayron. Nurse and patient. Crayon.
Arsène Chabanian. "Ostend." Water color.
Paul-Emile Chabas. Young girl. Crayon.
Louis Charlot. "Le Creusot. Usines Schneider (partie nord)." Water color.
Jules Chéret. The clown. Crayon.
Charles Cottet. French peasants. Crayon.
André Dauchez. Landscape. Pencil.
Adolphe Déchenaud. Before the crucifix. Crayon.
Mlle. Angele Delasalle. Landscape. Crayon.
Désiré-Lucas. Village scene. India ink.
William Didier-Pouget. Landscape. Pencil and crayon.
Paul-M. Dupuy. In the trenches, winter. Charcoal and chalk.
Maurice Eliot. "La Parisienne en 1906." Pencil.
Hubert-Denis Etcheverry. Homeless victim of war. Crayon.
François Flameng. "Saint Cloud, 4 Juin, 1906." Water color.
Charles Fouqueray. In the trenches. Water color.
Albert Fourié. Female figure and serpent. Red chalk.
Emile Friant. Head of young girl. Pencil.
Henri Gervex. Wounded soldier. Pastel.
Gaston Guignard. Landscape. Monotype.
Antoine Guillemet. Landscape. Pen with color.
Oct. Guillonnet. Offerings to the goddess of liberty. Pencil and wash.
Henri Harpignies. Landscape. Charcoal.
Antoine Injalbert. Woman's head. Sepia.
Marie-Joseph Iwill. Venice. Crayon.
Henri Jacquier. Man's head. Red chalk.
P.-Franc Lamy. Peasant girl. Water color.
Léo Laporte-Blairsy. Knitting. Pen.

J. P. Laurens. A soldier. Charcoal.
Paul-Albert Laurens. Mother and child and burning village. Charcoal.
Ernest Laurent. Female head. Charcoal.
Charles Leandre. Peasant woman. Crayon.
Albert Lebourg. Sketch of a village. Water color.
Louis Legrand. Mother and child. Charcoal, tinted.
Louis-Auguste Lepère. Landscape. Pen, sepia.
Henri Le Sidaner. Landscape. Wax crayon and pen.
Lucien Lévy-Dhurmer. Medusa head. Pen.
Léon-A. Lhermitte. Harvest rest. Charcoal.
Maurice Lobre. Church interior. Charcoal.
Ferdinand Luigini. Landscape. Sepia.
Fernand Maillaud. Mother and child. Crayon.
Laurent-Honoré Marqueste. Nude figure with mandolin. Crayon.
Henri Martin. Workman on ladder. Charcoal.
Maxime Maufra. Landscape. Water color.
Edgard Maxence. "Primavera." (Head of young girl.) Red chalk.
Emile-René Ménard. Classical subject. Red chalk.
Antonin Mercié. Head of young lady. Crayon.
André Metthey. Vase with dancing figures. Water color.
Hermann Paul. "Deuil. Laisse moi pleurer; je suis fière quand même." Water color.
René Piot. "Heureux ceux qui sont morts dans la grande bataille, couchés dessus le sol à la face de Dieu. Heureux ceux qui sont morts dans une juste guerre. Heureux les épis murs et les blés moissonnés." Water color.
Auguste-Emmanuel Pointelin. Landscape. Charcoal.
Jean-François Raffaëlli. After the battle. Crayon.
Paul Renouard. "Inauguration de l'Exposition Internationale de Liège en 1905." Crayon.
Georges Rochegrosse. Mother and child near burning village. Gouache.
Auguste Rodin. Figure sketch. Pencil.
Alfred-Philippe Roll. Figure study. Pastel.
Ferdinand Roybet. The drummer. Pen.
Fernand Sabatté. Male figure. Crayon.
Léon-Daniel Saubès. Head of John the Baptist. Charcoal.
François Schommer. Seated male figure. Charcoal and chalk.
Victor-Joseph Ségoffin. Head of man expressive of horror. Charcoal.
Paul Signac. Landscape. Water color.
Lucien Simon. Study of female figure. Pencil.
Guillaume Tronchet. The windmill. Water color.

Abel Truchet. "Les Poilus." "Quand je pense que j'aspirais à la vie au grand air!" Charcoal.
Charles-Albert Waltner. Portrait of a lady. Charcoal.
Jules-Emile Zingg. Harvest scene. Charcoal.
Henri Zo. "Pour que la liberté continue d'éclairer le Monde!" Charcoal.

To Mrs. E. H. Harriman, of New York, the Gallery was indebted for an oil portrait of Abraham Lincoln, presented on February 12, the anniversary of his birth. It is by Mr. George H. Story and, though recently painted, is based on sketches and notes made by the artist at the White House in 1861 and a photograph of the same period taken in the Washington studio of M. B. Brady. A small bronze bust of Oliver Cromwell, acquired in Paris many years ago, was received as a gift from Mrs. John Russell Young, of Washington. An interesting group of studio properties of the late Eliphalet Fraser Andrews (1835–1915), of Washington, contributed in his memory by Mrs. Andrews, contains many choice old objects mainly acquired during the artist's early residence in Germany, including a fine piece of tapestry, a brass-trimmed bureau from the Archiepiscopal Palace in Cologne, carved chairs, antiques from Nürnberg, ancient armor and arms, chasubles, brocades, and glass.

The number of paintings received on deposit during the year exceeded by more than fifty the number recalled. The 23 paintings by leading contemporary European artists which had been shown at the international exhibition held at the Carnegie Institute, Pittsburgh, Pa., during 1914, and brought to the National Gallery in June, 1915, by The American Federation of Arts, were withdrawn at different times for exhibition elsewhere, but on June 1, 1916, the following were again placed in the Gallery for an indefinite period:

W. Dacres Adams, of London. The Monument.
Edmond Aman-Jean, of Paris. Portrait Group of the Family of Aman-Jean.
S. J. Lamorna Birch, of Penzance, England. October: The River Course near Montreuil-sur-Mer.
Jacques Emile Blanche, of Paris. Anniversary.
Stephen Bosznay, of Budapest. By the River.
Max Clarenbach, of Wittlaer bei Kaiserswerth, Germany. Garden.
Charles Cottet, of Paris. Port of Douarnenez, Brittany.
John Crealock, of London. The Red Sofa.
Sir Alfred East (English, 1849–1913). The Rainbow.
Hermann Göhler, of Karlsruhe, Germany. Schloss Monrépos.
Julius Paul Junghanns, of Düsseldorf. A Memory of the Tyrol.
Laura Knight, of Penzance, England. The Governess.
Gaston La Touche (French, 1854–1913). The Ford.

B. Eastlake Leader, of St. Buryan, Cornwall, England. Moonlight after Rain.

George Sauter, of London (German). Mrs. Penelope Wheeler.

Willy Sluiter, of Laren, Holland. Autumn Day.

The collection of Mr. William A. Slater, also withdrawn for a part of the year, was, with one exception, returned in May; while Mr. Ralph Cross Johnson made several changes in his important loan, and increased the total number from 24 to 36 paintings.

Following is a complete list of the latter collection at the close of the year:

M. Albertinelli. Holy Family and St. John.

John Constable. Dedham Vale.

David Cox. Outskirts of a Wood.

N. Drost. Portrait of a Young Girl.

Govaert Flinck. Madonna and Child.

Thomas Gainsborough. The Earl of Mulgrave; Landscape; Landscape—Evening.

Francesco Guardi. A View in Rome; Ruins with Figures.

William Hogarth. Portrait of Mrs. Price.

Innocenzo da Imola, or Francia. The Marriage of St. Catherine.

Cornelis Janssens. Henry, Prince of Wales.

Sir Thomas Lawrence. Portrait of Mrs. Towry; Portrait of Lord Abercorn.

Lorenzo Lotto. A Venetian Senator holding Gloves.

Nicolaes Maes. A Man's Portrait.

S. Mainardi. The Virgin and Child and Two Angels.

Paulus Moreelse. Portrait of a Woman.

Sir Henry Raeburn. Portrait of Archibald Skirving.

Rembrandt. Rembrandt's Brother-in-law, or "A Man's Portrait."

Sir Joshua Reynolds. Portrait of the Duchess of Ancaster; Portrait of Viscount Hill; Portrait of a Lady; Portrait of Lord Lifford, Irish Chancellor.

George Romney. Portrait of Sir Sampson Wright.

Rubens. The Holy Family.

William Clarkson Stanfield. Marine.

Jan Steen. The Doctor's Visit.

G. B. Tiepolo. Christ in the Temple.

Titian. Portrait of a Cardinal.

B. Van Orley. The Visit of the Wise Men; The Holy Family Panel.

Richard Wilson. Italian Landscape; Landscape.

——. Head of Christ.

The other loans to the Gallery were as follows: From Mr. Wallace Bryant, of Boston, 36 oil paintings by himself, including portraits,

landscapes and figure subjects. From Mrs. George L. Andrews, of Washington, a painting entitled "Elf Ground," by George Inness. From Mrs. Joseph B. Dibrell, of Seguin, Tex., trustee, under the auspices of the Texas Fine Arts Association and Elisabet Ney Museum, Austin, a marble statue, full size, of Lady Macbeth, by Elisabet Ney. From Dr. C. C. Galloway, of Washington, a landscape by Diaz. From Mr. William H. Holmes, of Washington, a landscape by himself, entitled "Chestnut Bloom." From the estate of Arthur J. Parsons, late of Washington, two landscapes, one by John Constable, the other by Peter de Wint. From Mr. F. A. Pezet, Peruvian Minister at Washington, a painting entitled "The Transit of St. Joseph," attributed to Murillo or his disciple, Meneses Osorio. From Mr. J. Van Ness Philip, of Claverack, N. Y., a portrait of Maj. Gen. John P. Van Ness, by Gilbert Stuart. From Mrs. Emma J. Smith, of Washington, a painting entitled "Klingle Ford," by Max Weyl. From Mr. R. P. Tolman, of Washington, a portrait of Albert Pike, by S. Jerome Uhl.

The following paintings from the William T. Evans donation of contemporary American artists were lent for exhibition elsewhere: "The Mysterious Woods," by Roswell Morse Shurtleff, for a memorial exhibition of the works of this recently deceased artist at the Lotos Club, New York, in January. "Sunset, Navarro Ridge, California Coast," and "At Nature's Mirror," by Ralph Albert Blakelock, for benefit exhibitions of the paintings of this artist at the Reinhardt galleries in New York and Chicago during April and May. "An Interlude," by William Sergeant Kendall, lent to The American Federation of Arts, was exhibited, with a collection of portraits, between November and May, at the Worcester Art Museum, the John Herron Art Institute in Indianapolis, the Minneapolis Museum of Art, the City Art Museum of St. Louis, the Cincinnati Art Museum, and the Museum of the Rhode Island School of Design at Providence. It was then sent to Nashville, Tenn., to be shown in the Parthenon in Centennial Park during the summer of 1916. "A Gentlewoman," by J. Alden Weir, and "Caresse Enfantine," by Mary Cassatt, were also lent to the Federation of Arts and exhibited in circuit from November to May at the University of Missouri, the University of Nebraska, the University of Illinois, the University of Kansas, the Kansas State Agricultural College and the Kansas State Normal School.

The four paintings from the Evans collection sent to the Panama-Pacific International Exposition in San Francisco in January, 1915, remained there until the close of the exposition in December, 1915. They were: "Plymouth Hills," by John W. Beatty; "A Good Story," by Clara T. MacChesney; "Plenty," by Kenyon Cox; and "May Flowers," by Louise Cox.

MEETINGS AND CONGRESSES.

The Washington Society of the Fine Arts had the use of the auditorium, as in previous years, for its customary three courses of lectures. In the members' course, comprising 6 lectures delivered, with one exception, on the evening of the third Wednesday of each month from November 17 to April 12, Mr. C. R. Ashbee, Fellow of the Royal Institute of British Architects, spoke on "The province of the arts and handicrafts"; Mr. Carroll Beckwith, of New York, on "Versailles and its treasures"; Mr. Alfred Noyes, of England, on "Poetry"; Gwendolyn Logan (Mrs. Hubbard), the accomplished English actress, on "The art of the drama"; Mr. Thornton Oakley, of Philadelphia, on "The ideals of magazine illustration"; and Mrs. William A. Hutcheson, on "Hedges and other features of landscape gardening." Lantern slides were employed except by Mr. Noyes and Mrs. Hubbard. The popular course also consisted of 6 illustrated lectures on alternate Friday evenings from January 7 to March 17, all by Mr. Frank Alvah Parsons, of New York, whose subject was "Practical problems of art in house furnishing and decoration." The music course, by Mr. Nicholas Douty, of Philadelphia, included 5 lectures given on a Monday evening early in each month from November 8 to March 6, and was devoted to "The song as an art form," consisting of explanatory recitals tracing the development of the song from the earliest to the most modern composers, with numerous illustrations in which the piano was used. The subject was divided as follows: Early songs to Beethoven; The German romanticists; Polish, Bohemian, Finnish, Russian and Scandinavian songs; English and American songs; The most modern French and German songs.

Only two other associations met regularly in the Museum. The first of these was the Society of Federal Photographers, recently organized for the advancement of scientific photography as applied in governmental work, which held 10 meetings between October 8 and May 26, using the committee rooms except on three occasions, when special features, attracting larger audiences, made it necessary to occupy the auditorium. One of these principal lectures, all of which were well illustrated, was by Dr. C. E. K. Mees, head of the research laboratory of the Eastman Kodak Co., on the "Underlying theory of practical photography," the other two being by Mr. N. S. Amstutz, of Valparaiso, Ind., on "Marvels of illustration" and "Color scheme in photography," respectively. The District of Columbia Dental Society met monthly in one of the committee rooms, from February 15 to June 20.

The most important gathering of the year was the Nineteenth International Congress of Americanists, which met during convocation week, having been postponed from October, 1914, the time

originally fixed, because of the war in Europe where a large proportion of its membership is located. This congress is an association of scientific men devoted to investigations relating to the anthropology, archeology and history of the two Americas. Originated in France in 1867, its first regular session was held at Nancy in 1875, and since 1900 it has convened alternately in Europe and America every two years, its last previous meeting having been in London in 1912.

The invitation to Washington was extended and the arrangements for the Congress were made by the Smithsonian Institution in cooperation with Georgetown University, George Washington University, the Catholic University of America, the Washington Branch of the Archaeological Institute of America and the Anthropological Society of Washington. Affiliated with the Congress in its meetings were Section I of the Second Pan American Scientific Congress, then also in session in Washington, the American Anthropological Association, the American Folk-Lore Society, the American Historical Association and the Archaeological Institute of America. All of the sessions, with one exception, were held in the auditorium and committee rooms in the new building of the Museum, and while the Congress had conveniently at hand the extensive national collections relating to all branches of anthropology, an exhibition of particularly interesting and pertinent series of objects in physical anthropology, archeology, ethnology and history was specially arranged in the foyer.

The meetings continued from December 27 to 31, inclusive, with two brief sessions on January 3 and 4. On the evening of December 29 a reception was given by the Regents and Secretary of the Institution to meet the members of the Congress, of the Second Pan American Scientific Congress and of the several national organizations then convened in Washington. Both of the exhibition floors in the new building were lighted, and music was furnished by the Marine Band. On the afternoon of December 31, Secretary Walcott, as president of the Washington Branch of the Archaeological Institute of America, received the members of the Congress of Americanists and their friends at a tea in the main hall of the Smithsonian building. This Congress, which was more largely attended than any previous gathering of the Americanists and at which 58 official delegates were present, 16 representing governments and 42, various institutions, was of direct and special interest to the scientific staffs of the National Museum and the Bureau of American Ethnology, many of the members of which took an active part in matters of organization and arrangement, and in the programme of the meetings.

A most pleasing ceremony, which took place in the auditorium on February 9, was the dedication of a bronze tablet in memory of Prof. S. F. Baird as the originator of the federal fishery service. The tablet was executed by Tiffany & Co., of New York, as a donation

to the Bureau of Fisheries and for permanent installation in its building, on the order of 47 contributors, consisting of persons who had served in the fishery work under Prof. Baird or had later joined the staff of the bureau, and of others who have been more or less closely connected with this service or with related operations to which Prof. Baird gave impetus. Measuring about 2 feet wide and 3 feet high, the tablet has a medallion bust portrait of Prof. Baird above, followed by the inscription: "Spencer Fullerton Baird, 1823–1887, Founder and Organizer of the United States Bureau of Fisheries, Commissioner of Fisheries 1871–1887. He devoted his life to the public service and through the application of science to fish culture and the fisheries gave his country world-wide distinction. His coworkers and followers in this field dedicate this tablet on the anniversary of the establishment of the Federal Fishery Service, February ninth 1916."

The tablet in a temporary frame, topped by a shield of the United States and covered with two American flags, was mounted on an easel on the left of the platform. Against the screen in the background was a large portrait of Prof. Baird, while on the right was a small Museum case containing the original manuscript draft of the resolution of Congress approved February 9, 1871, for the appointment of a commissioner of fish and fisheries; the original appointment of Prof. Baird to this position, signed by President Grant; the special grand prize, an elaborate vase, awarded by Emperor William I of Germany to Prof. Baird as "the first fish culturist in the world," at the International Fishery Exhibition held in Berlin in 1880; and a copy of the recently published work by Dr. William Healey Dall, entitled "Spencer Fullerton Baird: A Biography." The platform was further decorated with American flags, official flags of the Bureau of Fisheries and palms. Those who took part in the proceedings were Dr. Hugh M. Smith, the present Commissioner of Fisheries, who presided; Dr. Dall, who spoke upon personal reminiscences of Prof. Baird; Prof. Edwin Linton, who presented the tablet on behalf of the contributors; Mr. Vinal N. Edwards, of the fishery station at Woods Hole, Mass., who unveiled the tablet; and the Hon. Edwin F. Sweet, Assistant Secretary of Commerce, who accepted the memorial in an address touching upon the services of Prof. Baird toward the conservation of the fisheries and the importance of strenuously furthering this cause in the interest of the entire country.

During the week of the Safety First exhibition, February 21–27, described on a subsequent page, the auditorium was occupied on five days for lectures and discourses on the subjects comprehended by this notable display, nearly all of which were profusely illustrated, both motion pictures and lantern slides being used. On the afternoon of the 21st, called Interior Department day, Mr. Ralph W. Stone

spoke on the work of the Geological Survey in connection with hygiene; and Miss Helen Gordon, principal of the kindergarten training department of the J. Ormond Wilson Normal School, on "Safety first through the kindergarten for the individual, the home, the city and the nation." In the evening Hon. Andrieus A. Jones, First Assistant Secretary of the Interior, delivered an address on the "Work of the many branches of the Government which are participating in the exhibition, and the apparent interest of the general public in its conservation activities."

There were two lectures in the afternoon and one in the evening of the 23d, Department of Agriculture day, the former by Mr. C. A. Lindstrom, of the Forest Service, on the work which that branch is doing in the preservation of lives and property, and Mr. Allen S. Peck, Forest Inspector, on "The Forest Service fire protection plans"; the latter by Hon. Carl Vrooman, Assistant Secretary of Agriculture, on the activities of the Government toward the preservation of life and property. The afternoon of the 24th, Labor Day, was also devoted to two lectures. Mr. Bennet L. Mead, of the Children's Bureau, spoke on "Safety first for children," attempting by means of illustrations to show to children street dangers, etc., and the care of young children; and Mr. Lucien W. Chaney, of the Bureau of Labor, on "The iron and steel industry." "The relations of the Department of Labor to the problems of industrial safety" was the subject of a discourse in the evening by Hon. William B. Wilson, Secretary of Labor.

On the morning of the 25th, Department of Commerce day, the safety first work engaged in by the Bureau of Standards, Bureau of Lighthouses and Bureau of Navigation, was illustrated by several reels of motion pictures. In the afternoon Dr. E. Lester Jones explained the work of the Coast and Geodetic Survey, dwelling specially on conditions in Alaska. On the 26th, Treasury and Police day, Mr. William S. Shelby, of the Metropolitan Police Department, lectured on the "Relation of the policeman to the citizens, and safety first," to four classes of approximately 300 children each, between the hours of 11 a. m. and 3 p. m. He was followed by two members of the staff of the Bureau of the Public Health Service, Dr. W. C. Rucker and Dr. L. E. Cofer, who spoke, respectively, on "The prevention of the interstate spread of disease," and "Safety first from foreign diseases." Assistant Secretary of the Treasury, Hon. Byron R. Newton, gave a discourse in the evening on the activities of the Coast Guard, the Marine Hospital and Public Health Service.

This exposition of government appliances and methods in relation to safety first was also the occasion for a meeting of State mine inspectors who assembled in Washington under the auspices of the Bureau of Mines and occupied the larger committee room on February 24 and 25. Only official representatives were present.

The exercises attending the centenary celebration of the organization of the Coast and Geodetic Survey, consisting of an illustrated exposition of the work of that service, were held in the auditorium on the afternoon and evening of April 5 and the afternoon of April 6, and were supplemented by an important exhibition in the foyer, elsewhere described. These meetings were of exceptional interest as they were devoted to addresses by eminent men who had been invited to speak upon those phases of the Survey's activities with which they are best acquainted, and in this way practically all of the various kinds of work which that bureau undertakes were commented upon by experts not connected with it. These papers covered the past and present of the Survey and in a measure the possibilities for greater results to be accomplished.

At the annual meeting of the National Academy of Sciences, on April 17, 18 and 19, the auditorium was used for the presentation of scientific papers in open session, the committee rooms being occupied for the business sessions. "The origin and evolution of life on the earth" was the subject of two illustrated lectures by Dr. Henry Fairfield Osborn, under the William Ellery Hale foundation, the first of which was delivered on the evening of April 17, the second on the afternoon of April 19. The former was followed by a conversazione in the art gallery and rotunda, with music by the Marine Band, to which all members of the scientific societies of Washington, with ladies, were invited.

The American Association of Museums held its eleventh annual meeting in Washington from May 15 to 18, and The American Federation of Arts, its seventh annual convention from May 17 to 19, with one joint session. The Museums Association utilized the auditorium on the morning of May 17, but all other sessions of both organizations were held at the New Willard Hotel. The Association of Museums had its origin in a meeting of nine directors of American museums at the National Museum in 1905. It was formally organized in New York the next year, and with a constantly increasing membership and well directed efforts, it has come to be recognized as an exceedingly important factor in the advancement and direction of museum movement throughout the country. This, the first meeting in Washington, was largely attended and an interesting programme was presented, special topics being "A museum game," "Instruction service in museums," and "The art museum and the people." On the evening of May 17 a reception in the name of the Regents and Secretary of the Institution was given in the new building to the members of the Museums Association and the delegates to the convention of the Federation, the occasion being signalized by the opening of a loan exhibition of American industrial art, which had been assembled under the auspices of the Federation of Arts.

Other annual or special meetings in the Museum were as follows: During a three-day convention, the National Association of First and Second Class Postmasters occupied the auditorium for two of its sessions, on the morning and afternoon of October 21, one of the features of which was an exhibition of motion pictures illustrating the postal service. The auditorium was also used during the day and evening of December 16 by the Mining and Metallurgical Society of America, meeting in collaboration with the American Mining Congress and several other mining and engineering societies, and with representatives from several chambers of commerce and many operating mines. The object of the gathering was to urge upon Congress the necessity of modifying the existing United States land laws as they affect mineral locations, and the appointment of a government commission to investigate the questions and interests involved and to make recommendations as a basis for a proposed mining law revision. The speakers included members of Congress and others prominent in mining matters, and some of the addresses were illustrated with lantern slides. The Society of American Foresters, the American Oriental Society and the American Surgical Association all held their annual meetings in the new building, which occurred on January 22, April 24 to 26 and May 9 to 11, respectively.

Many interesting lectures on various topics were delivered in the auditorium during the year, nearly all of which were illustrated with lantern slides, and one or more also with motion pictures. On the evening of November 5 Mr. Henry Turner Bailey, of Boston, spoke before the Art and Archaeology League on "A national museum and school of the arts." "The necessity for water power development" was the subject of a discourse by Mr. Henry J. Pierce, of Seattle, on the evening of January 18, given at the request and under the auspices of the Senators and Representatives in Congress from the State of Washington. The committee of the Daughters of the American Revolution on historic spots and records and their preservation was sponsor for two lectures, one by Mr. Fred E. Woodward, on the evening of January 27, on "The monuments or milestones of the boundary of the federal territory called the District of Columbia," the other by Mr. Glenn Brown, on "The plan of preserving the beauty of Washington."

Under the auspices of the Washington Academy of Sciences, 7 lectures were given during March, April and May, 4 occurring on Friday afternoons in April constituting a series dealing with the subject of nutrition. The entire programme was as follows: "Surface features of Europe as a factor in the War," by Dr. Douglas W. Johnson, of Columbia University; "Chemistry in relation to the War," by Dr. L. H. Baekeland, of the Naval Consulting Board; "The basal food requirements of man," by Dr. Eugene F. DuBois, Medical Director,

Russell Sage Institute of Pathology; "Nutrition and food economies," by Dr. Graham Lusk, of Cornell University Medical College; "Investigations on the mineral metabolism of animals," by Dr. E. B. Forbes, of the Ohio Agricultural Experiment Station; "The relation of the Vitamines to nutrition in health and disease," by Dr. Carl Voegtlin, of the U. S. Public Health Service; and "Resemblances between crown gall in plants and human cancer," by Dr. Erwin F. Smith, of the Bureau of Plant Industry.

On March 25, Dr. Aleš Hrdlička addressed the Alumni of the Angle School of Orthodontia on "Normal variations in the human dental arch"; and on April 29, Prof. Albert T. Clay, of Yale University, gave an illustrated lecture before the Washington Society of the Archaeological Institute of America, on "Art in Babylonia and Assyria." On May 12, Mr. Frank M. Meyer, explorer, of the Department of Agriculture, lectured on "Travel and exploration in China," under the auspices of the District of Columbia Chapter of the Society of Sigma XI; and on May 24, Mr. Joseph Steinmetz, President of the Aero Club of Pennsylvania, gave an address, under the joint auspices of the Washington Chemical Society and the Washington Society of Engineers, on the subject of "Machine shop and chemical laboratory as related to national preparedness for defense."

The States Relations Service of the Department of Agriculture had the use of the committee rooms on November 23 and 30; while, under the auspices of the same service, the annual conference of State agents in home demonstration work, with exhibitions of methods of cooking and preserving, was held from December 13 to 17. Higher education for women in the District of Columbia was the subject of a meeting of the Washington branch of the Association of Collegiate Alumnæ on December 15. At the instance of Maj. Raymond W. Pullman, Chief of Police, some 150 members of the local organization of the Boy Scouts were instructed on February 12 in the subject of "Safety first" as it relates to the police regulations, by Mr. W. S. Shelby of the Police Department. On the afternoon of February 27, the auditorium was occupied by the community forum known as the Margaret Wilson Social Center of the Grover Cleveland School, at which, following addresses to the pupils, a series of motion pictures illustrative of the safety first movement was shown.

A reception in honor of the delegates to the twenty-fifth annual convention of the Daughters of the American Revolution was given by the Regents and Secretary of the Institution in the new building on the evening of April 15, from 9 to 11 o'clock, the main floor being used for the occasion, and music furnished by the Marine Band. On the afternoon of May 5, the National Society of Colonial Dames and members of other kindred societies were received in the older Museum building, a special view of the American historical costume col-

lection and of the loan collection of the Colonial Dames being the principal feature of the function. On the evening of May 15 the members of the recently established Department of Commerce Club had a meeting in the auditorium, at which they were addressed by Secretary William C. Redfield on the benefits to be derived from such an organization, followed by a musical programme and an exhibition of motion pictures.

SPECIAL EXHIBITIONS.

The Museum furnished accommodations for and assisted in the installation of several important special exhibitions, which are to be classed among the more noteworthy features of the operations of the year. Three of these related strictly to affairs of the Government—an exposition of its Safety First methods and appliances, the centennial anniversary of the Coast and Geodetic Survey, and a competition of sculptural and architectural designs for a memorial to Francis Scott Key. Two were held in connection with an international congress and a national convention, respectively, the former pertaining to anthropology, the latter to industrial art. More restricted, but of much local interest, was a display of industrial work by the children of the playgrounds of Washington.

ANTHROPOLOGY—INTERNATIONAL CONGRESS OF AMERICANISTS.

As a feature of the meeting of the Nineteenth International Congress of Americanists and affiliated societies the last part of December, 1915, a varied and interesting special exhibition of anthropological objects was arranged in the lower great hall of the new building, where it attracted much attention. While the material was mainly supplied by the Museum, there were several contributions from other sources.

Pertaining to physical anthropology were the following exhibits, arranged by Dr. Aleš Hrdlička of the Museum staff: Twenty-four busts of superior fidelity and workmanship, comprising a series of the Omaha, Osage, and distinguished individual Indians from delegations sent by the tribes to Washington, made by the Museum, and forming accurate and permanent records of the normal type of full-blood Indians of these tribes. Two cases of variously fossilized or petrified human skulls and bones, all originals but three, which at one time or another have been attributed to geologically ancient man, but which are demonstrated to be fairly recent and Indian. Two cases of specimens, mostly undescribed, from the Peruvian cordilleras, showing native surgery for wounds of the skull—modes of operation by drilling, scraping and cutting, and trephining by means of plates of gourd, shell and silver. One case illustrating the range of colors in the hair of living adult white Americans of at least three generations on

each side born in the United States, and of the character of the hair of pre-Columbian Indians, and of Egyptians from before 4,000 B. C. Installed elsewhere, but noted in conjunction with the above, were 10 cases containing illustrations of prenatal development of the brain, casts of brains of famous men and of remarkable cases, casts of racial brains and of brains of apes, specimens showing the development of the skull to the time of birth, the most complete series of casts, etc., in America, relating to early man, and representations of the three varieties of artificial skull deformation in America, the so-called "flathead," the "Aymara" and the "Pueblo," and of various artifacts on skulls, such as painting, tattooing and ceremonial decorations.

An exhibit assembled by Mr. W. E. Safford, of the Department of Agriculture, and occupying several cases, illustrated in a very novel and instructive manner the principal food, textile and other useful plants which America has given to the world. Specimens of the plants and plant products from prehistoric graves and mounds ranging from Argentina and Chile to Canada were shown, supplemented by representations of grain, fruits and vegetables on earthenware funeral vases and stone images, and by photographs of examples in the National Museum, the Field Museum of Natural History, the American Museum of Natural History and the Peabody Museum of Harvard University. The seeds, fruits and roots from graves on the arid desert coasts of Peru and northern Chile and the caves and cliff-dwellings of the southwestern United States are in a remarkably perfect state of preservation, while those from regions where there is more rainfall have persisted only when charred or carbonized by fire, as seen in specimens from the burial mounds of the eastern United States. Apart from the material of undoubted pre-Columbian origin, recent specimens from cultivated plants endemic in America were also shown, together with photographs of the principal types of maize, beans, squashes, peanuts, fibre-plants and fruits.

A series of characteristic specimens illustrating the "red paint culture" of Maine was exhibited by Dr. Warren K. Moorehead, curator of the department of archeology, Phillips Academy, Andover, Mass.; and two series of potsherds of the ancient Pueblos of the Southwest were contributed by Dr. A. V. Kidder, curator of North American archeology, Peabody Museum, Cambridge, Mass.

A number of important early treaties between the Government of the United States and Indian tribes, containing the signatures and totems of many noted chiefs, were furnished by the Department of State. They included Fort Pitt, September 17, 1778; Fort McIntosh, January 21, 1785; Fort Stanwix, October 22, 1784; Fort Harmar, January 9, 1789; the Cherokee treaty of July 2, 1791; and the Treaty of Prairie du Chien, July 29, 1829. The recent remarkable

progress in ethno-photography was illustrated by enlargements of portraits of southwestern Indians by Mr. Frederick Monsen, of New York, and of celebrated Indians by the Rodman Wanamaker expedition. Also included in the exhibition was a selection of anthropological papers published by the Smithsonian Institution and its bureaus and by other institutions, societies and individuals conducting anthropological work in America.

SAFETY FIRST EXHIBITION BY THE FEDERAL GOVERNMENT.

During the week of February 21 to 27, the main lower hall in the new building, with three of its communicating rooms, was occupied by one of the most remarkable and interesting Government exhibitions that has ever been brought together. Having as its theme the "Safety First" idea, and originating in a suggestion from the Bureau of Mines, it was participated in by 19 bureaus under 6 of the executive departments, 1 independent bureau, the American National Red Cross Society and the Metropolitan Police Department, the activities of all of which are primarily for, or comprehend in a marked degree, the safeguarding of life and property as well as the prevention and care of disease. While there is not an industry in the United States which is not in some way the beneficiary of the safety first work of the Federal Government, never before had it been attempted to illustrate the government's activities and measures of preparedness along this important line on a scale so complete and comprehensive, and, notwithstanding the restrictions imposed by the limited space available, the demonstration proved in every respect most effective and satisfactory.

Attention was widely called to the exhibition in advance and during the week, as elsewhere described, many illustrated lectures and addresses explanatory of the exhibits and of the relation of the Government to safety first matters were given in the auditorium. The governors of States were also notified of the national aspect of the exposition, one of the results of which was to bring about a meeting of State mine inspectors in the Museum, and manufacturers and operators from all over the country were invited to be present.

The arrangements for the exhibition were in charge of a general committee, of which Maj. William Lyster, U. S. Army Medical Corps, was chairman; Mr. M. F. Leopold, of the Bureau of Mines, secretary; and Assistant Surgeon General W. C. Rucker, of the Public Health Service, chairman of the committee on exhibits and floor space. Each of the participating organizations also had one or more representatives to attend to its particular interests.

Opened on week days during both the day time and evenings, and on Sunday during the afternoon, the total attendance of visitors for the week was 35,447, a daily average of about 5,000; but on Wash-

ington's birthday it exceeded 9,000, and on Saturday reached about 8,500.

The President of the United States, in a letter to the Secretary of the Interior just previous to the exhibition, expressed his approval of the project in the following words:

"Particularly at this time it is wise and wholesome that the Federal Government should call the attention of the people of the country to what the government is doing to preserve life, the greatest of all the resources of the nation.

"The rescuer of the Bureau of Mines, who braves the poisonous gases of a mine and saves a miner from death; the coast guard who at the peril of his own life saves the passengers of a helpless vessel from death; the surgeon of the Public Health Service who stops a dreaded scourge in its incipiency and saves thousands of lives; the engineer who succeeds in reducing the hazards of his industry to its men, and the man who brings about better conditions of living among the people—I consider all types of the hero who will be most regarded in the near future.

"The Federal Government is doing an exceedingly helpful work along just such lines, and I doubt if the public appreciates how extensive and important that work is. I especially like your idea of making this as much as possible a national affair. Every manufacturer, every railroad man, every miner, every operator, every workman, and every humane person in the country ought to be interested. I sincerely wish you success in this undertaking."

In view of the wide scope of this exhibition and the range of illustration which it furnished, it might well have served as the basis for a popular treatise on the subject of what the Government is doing for the preservation of life and property. A work of this character would be of extreme interest to the public and will, doubtless, sooner or later be prepared. As such a publication appears not at present to be contemplated, and it has seemed important to secure a permanent record of this particular exhibition, an effort has been made, with the help of the several bureaus represented, to explain on the following pages at least its main features and the lessons it was designed to teach. The information supplied the Museum for this purpose amounted in some instances to well-rounded summaries of the aims and methods of the bureaus, while in others it consisted of scarcely more than lists of the objects exhibited, but, notwithstanding these inequalities, it may be regarded as covering the subject in a fairly complete manner.

DEPARTMENT OF THE TREASURY.

Bureau of the Public Health Service.—In the exhibit provided by this bureau a symbolical figure of man occupied the center of the group, over which was the caption "Health is Safety" and "Safety

is Health." On either side were placards tersely stating the results of 10 years' work in the prevention of disease. At the right the entire process in the manufacture of typhoid vaccine was demonstrated, each successive step being succinctly labeled, beginning with the culture, its growth in the incubator, the killing of the organisms, their counting through the aid of the microscope, the various tests for purity upon rabbits, guinea pigs, and white mice, together with the filling and testing of the ampulles and finally the finished product. At the left were three models of rat-proof houses, showing the various methods of rat-proofing, a model of a vermin-proof stable and one illustrating the construction of a rat-proof wharf. In the center was a mounted dog, properly muzzled, designed to bring to the attention of the public not only the loss of life from a preventable disease, rabies, but also the economic loss now ensuing from this infection. The remainder of the exhibit consisted of pictures illustrating quarantine procedure and placards showing the reduction in mortality of such conditions as Fourth of July tetanus, smallpox, typhoid fever and diphtheria.

The Coast Guard.—Illustrating with a map the cruising districts of Coast Guard cutters, the location of Coast Guard stations and the extent of coast districts, this service was represented by the following apparatus, belonging to the outfits of its stations and vessels on the seacoasts and Great Lakes: A self-bailing power surfboat, of full size and completely equipped, designed for launching off the beach and making way through the surf or a heavy sea in rescue operations. A beach apparatus cart and outfit, also of full size, designed for establishing hawser connection with a stranded vessel from the beach, its purpose being the taking off of the crew, passengers, mail, etc., by means of a buoy hauled back and forth along the hawser. A steel life-car, for use in place of the buoy under certain conditions, as, for instance, since it can be entirely closed, when it is necessary to haul through the surf, the hawser being made fast on the hull of the vessel, owing to the loss of her spars. A 6-pounder, rapid-fire gun, one of the battery installations on cutters, adapted, by the use of a special projectile of Coast Guard design, for line-throwing. Hawser connection between the cutter and a vessel needing assistance can be established after the shot line has been passed, obviating the necessity for employing a boat when the condition of the sea would render its use doubtful of success. An acetylene light for illuminating the beach and vicinity of a wreck during night operations. An acetylene reflector signal lamp for night communication between stations and vessels passing along the coast, designed for signaling with the Morse, international or other telegraphic codes employing the dot and dash system, the signals being produced by shutter interruption of the light beam.

DEPARTMENT OF WAR.

Medical Department, U. S. Army.—The exhibits included the following: Three lay figures of soldiers, showing masks used in the present European war for the protection of soldiers against inhalation of poisonous gases. One lay figure of a soldier equipped with the new metallic helmet issued to the French troops for protection against rifle and shrapnel fire in trench fighting. Two lay figures of soldiers equipped with medical officers' and hospital corps' belt for carrying emergency medicines, dressings, etc., for use in the field. Operating room of field hospital equipped with folding operating table, general operating case, surgical and sterilizer chests, muslin roll of surgical dressings and acetylene generator and lighting outfit. Outfits for sterilizing water for drinking purposes for use by troops in the field, comprising a Forbes Waterhouse sterilizer, a Darnell filter, and a Lyster water bag. Dressing station outfit assembled in boxes and packed on an effigy of a pack mule, and the same unpacked and ready for use. Equipment for fitting up railway cars for the transportation of wounded to base hospitals. Chests containing medicines, surgical instruments, appliances, dressings, and equipment for use by the Medical Department of the Army in the field.

DEPARTMENT OF THE NAVY.

The *Hydrographic Office* was represented by the following examples of its publications, which are issued in accordance with the objects of its establishment "for the improvement of the means for navigating safely the vessels of the Navy and of the mercantile marine," namely: A general catalogue of navigational books, charts and periodical publications; circular of information, specimens of daily memorandum, weekly notice to mariners, weekly hydrographic bulletin, monthly and quarterly pilot charts of each ocean and of Central American waters, pilots or sailing directions, navigational manuals and tables; several examples showing the world, ocean, coast and harbor types of charts used in navigation; diagram "Utilization of marine data," illustrating the character of information collected from mariners in return for periodical publications in which these data are incorporated; and reprints of hydrographic information regarding the use of oil to calm the sea, cyclonic storms, ice movements, etc.

The *Bureau of Construction and Repair* contributed an electric sterilizing apparatus obtained for the U. S. S. *California*, a Franklin life buoy equipped with electric detaching device, an Edmond's Kapok life preserver, a Kapok life garment, a Kapok mattress or cushion, a cork life ring with water-tight attachment, a Draeger self-rescue apparatus, non-slipping treads, a lavatory with heater, basins without drains, toilet fixtures, an irrigating bottle rack, a surgeon's stool, an electric bacteriological incubator, a carbon tetrachloride fire ex-

tinguisher, foam fire extinguishers and goggles for use in connection with acetylene work and for chippers and cutters.

Among the appliances shown by the *Bureau of Steam Engineering* were a steam siren whistle, a ½-kilowatt panel radio set, an aeroplane engine, magazine, bulkhead and ceiling fixtures, a portable electric safety and a diving lantern, portable blinker signal and tube sets, a portable searchlight, a warning signal howler, two fire alarms with thermostat frames and thermometers, an engine revolution telegraph transmitter and indicator, a set of fire control telephones and a set of ship's telephones.

The exhibit by the *Bureau of Medicine and Surgery* included an operating room equipment for a modern battleship, expeditionary boat boxes for field work, pouches for the hospital corps for field work for landing parties, laboratory equipment for a battleship, and various types of life preservers and of litters for the transportation of the injured.

DEPARTMENT OF THE INTERIOR.

Bureau of Education.—The presentation made by the Bureau of Education consisted mainly of charts showing the work of the bureau, and of actual school equipment the purpose of which is to conserve the physical and mental life of children in schools. These were supplemented with large photographs and with copies of bulletins of the bureau relating to the matters illustrated. In some cases demonstrations of material were also given. The principal subjects of the exhibition, which was installed on five tables, were as follows:

1. Home education through cooperation with Mothers' congress and Parent-teacher associations. Kindergarten exhibit showing materials used and pictures of children at work—health, happiness, moral, physical and mental training. 2. States having regulations to prevent fires indicated on a map—one building devoted to educational purposes burns every 24 hours in the United States. First-aid cabinet used in Washington schools, containing bicarbonate of soda, absorbent cotton, boric acid, arnica, camphor, ammonia, etc. Washington City fire drill regulations; safety erasers, crayons, hygienic covers for books, etc. Percentage of illiteracy of foreign born, and of native whites and colored, and efforts to overcome it, shown on Division of Immigration charts. 3. Safety first through State legislation. States having laws concerning schoolhouse construction, health inspection of children in schools, fire drills and child labor. Open-air schools and various activities of pupils, illustrated by pictures. 4. Cooperation with public utilities; chart showing how children are trained to avoid accidents on street railways, with picture of children listening to lecture in school auditorium. Alaska hospitals, reindeer service, schools and sanitation. 5. Home economics through choice of foods, care of family, care of house; pictures showing girls

being trained in home activities. School and home gardening insures health, good food, habits of industry, more years in school and more interest in it, hence better and more efficient lives.

By means of other charts and of pictures and maps were shown the number of children per school nurse in ten cities, and the work of the school nurse; sanitation in rural schools; dental inspection of 443 cities with medical inspection, 34 per cent having dental inspection by dentists; extent of medical inspection in city and rural schools, and work of school doctor and number of children he cares for in 10 cities; health defects of city and country children compared in 25 cities and 5 States; pictures showing bad buildings, bad drinking facilities in 50 per cent of rural schools; hygienic conditions of 109 rural schools in 5 States showing high percentage of insanitary privies, windows, cloak rooms, heating, ventilating, desks, etc.; drinking facilities as to individual and common cups, and fountains; ratio of city and rural school enrollment in all States; States, cities, and rural districts having sewing van, lunches in schools, etc.

Geological Survey.—The following were comprised in the exhibit of the Geological Survey: A Price current meter, in operation, demonstrating the manner in which the Survey measures the discharge of streams, which, in relation to the discharge of sewage and industrial wastes, is an important factor in stream pollution. Diagrammatic charts and photographs illustrating sources of pure and impure ground water and the manner in which such supplies become contaminated or may be naturally protected against contamination, including charts of conditions in sand, gravel, limestone, granite, and sandstone, and indicating several classes of ground-water supply. A traveler's map of Mojave Desert and a topographic map of Death Valley, showing how these carefully prepared detailed maps may serve travelers in arid regions to find correct trails and safe water. A large number of instruments used in making the detailed topographic atlas of the United States, demonstrated by attendants, included a precise prism level, a theodolite, a 20-inch Y level, a transit, planetables, a Beaman alidade, a Gale alidade, a Baldwin solar chart and gnomon, and several other appliances and attachments invented or perfected by members of the Survey. The topographic maps of the Survey are almost invariably used, wherever available, as the base maps for all sanitary surveys because of their accuracy and detail. A few publications of the Survey of general interest to or dealing particularly with the subject of sanitation were also exhibited.

Bureau of Mines.—The chief purpose of the Bureau of Mines is to promote safety in the mining and metallurgical industries in the United States. It is equipped with 5 mine-safety stations, 8 mine-safety cars, and 2 automobile rescue trucks, with crews of life savers and first-aid men who respond to calls for assistance at mine disasters.

Since its establishment more than 40,000 miners have been trained in mine rescue and first aid.

With few exceptions, all of the material exhibited had seen actual service. The entire mining industry was not represented, only those safety devices being shown that are used by engineers of the bureau in the field. A number had been developed by the bureau, while others had at least been improved through recommendations of its engineers. The devices were segregated under general titles and each bore a concise descriptive card. The locations of the mine safety cars and stations and of the offices and experiment stations were indicated on a map, while various phases of the rescue work were depicted by means of photographs mounted on a screen. The features of the exhibition were as follows:

On three life-size manikins were displayed three types of self-contained oxygen breathing apparatus used by the rescue crews in exploring mines after a fire or explosion. On a fourth was shown the Gibbs breathing apparatus, developed by engineers and physicists of the bureau. Light and with its parts well protected against injury, its special feature is that the oxygen is fed at the rate it is used, so that when plenty is available for the wearer while working hard, none is wasted while he is resting. With these devices were a spirometer for testing breathing apparatus, mine-rescue signal horns for giving warning when wearing breathing apparatus, and canary birds and oxygen bird cages. The canary is very sensitive to carbon monoxide and is used to detect the presence of gas; when the bird shows distress the men know it is time to put on their breathing apparatus; the shutter on the cage is closed, the oxygen turned on and the bird recovers.

Next in the series were a 75-foot line employed by rescue crews to find their way back out of a mine, and a portable mine-rescue telephone used by men wearing breathing apparatus, the transmitter of which is strapped directly over the vocal cord. By means of this telephone a rescuer wearing breathing apparatus can maintain communication with the fresh air base for a distance of about one-quarter of a mile.

For reviving a person overcome by mine gases was a device for administering pure oxygen, consisting of a tank, a reducing valve for regulating the flow of oxygen, tubes, and a face mask with an outlet valve for the breath. This appliance is employed in conjunction with artificial methods of respiration, which, with others, were represented by a lungmotor, an apparatus for forcing air or air enriched by oxygen in and out of a person's lungs; the stretcher used by rescue crews in carrying injured persons from a mine, splints for tying broken limbs and a completely equipped Bureau of Mines first-aid cabinet.

Photographs of the rock-dust barriers devised by its engineers for checking explosions in coal mines and a working model of the trough rock-dust barrier illustrated an important part of the bureau's work in investigating the causes and methods of prevention of explosions in coal mines. The force of the explosion dumps the barrier and launches its load of rock dust into the mine air, cooling and quenching the flame. Two pieces of apparatus devised by the bureau are used for conducting tests, the one to determine the inflammability of coal dusts in order to ascertain how much rock dust or shale dust must be added to make the coal dust inert, the other the inflammability of mine road dusts and rib dusts. In the former the dust is blown in a cloud against a heated platinum igniter within a glass bulb, the pressure developed within the bulb being a measure of the inflammability of the dust. The latter is for measuring the proportion of ash or shale dust in mine-road samples, and included a scoop for taking samples of mine-road dust and rib dust. A manometer was also shown in this connection. Another bureau device is one employed in investigating the effects of rock dust as a cause of pulmonary disease in the air of the lead and zinc mines of the Joplin district. The amount of dust breathed by a miner in a given time can be determined, and as a result of recommendations based on such investigations the health conditions in these mines have been greatly improved.

Among the many other devices exhibited were the following: An explosion-proof motor approved by the bureau and based upon its tests of electrical mining equipment as permissible for use in gaseous mines, illustrated by a photograph. Apparatus for testing mine air and ventilating currents in mines, including an anemometer, a psychrometer and an aneroid barometer. Apparatus for detecting fire damp; a flame test by which the percentage of oxygen or carbon dioxide can be determined; a portable device for the analysis of methane in mine air; an Orsat apparatus for analyzing mine gases, used in mines after a fire or explosion to determine from the composition of the gases the progress of the fire; and bottles for collecting samples of mine gases. Electric and flame safety lamps of types which, having passed certain tests, are designated by the bureau as permissible for use in gaseous coal mines, together with a box for testing such lamps in an atmosphere of explosive gas. Sixty-five ingredients of explosives that have passed chemical and physical tests by the bureau and been designated as permissible for use in gaseous and dusty mines. Having a short quick flame, they are much less liable to ignite gas or dust than the flame of black powder or dynamite; no great mine disaster has yet been traced to their use, and their introduction, largely due to the efforts of the bureau, has marked a great stride in increasing safety in coal mines.

An apparatus for testing the liability of an explosive to exude nitroglycerin. Devices to insure the safety of miners in handling explosives, consisting of a 5-pound powder jack or metal water proof box for carrying powder into a mine, and a safety box for carrying the detonators used in blasting, only one of which can be removed at a time. Apparatus to insure safety in firing shots by electricity; a galvanometer for testing the circuit of a round of shots; a vest pocket firing machine, and electric igniters, consisting of a paper or wood capsule charged with gunpowder.

In two light-tight booths was displayed a radium exhibit. One contained two spinthariscopes and two radium safety signs, the other an emanation tube. Included in this connection was a tube containing one gram having the appearance of radium chloride, which in this amount would have a value of $120,000.

The collection of mine-accident statistics, an important phase of the bureau's work, compiled and classified so that operators and workers may readily see where the hazards arise and take measures to improve conditions, was illustrated by 5 charts. The bulletins, technical papers and miners' circulars of the Bureau of Mines relating to mine safety were also exhibited.

DEPARTMENT OF AGRICULTURE.

Weather Bureau.—In the preparation of the Weather Bureau exhibit the idea of presenting only those features of the bureau's work which are more directly concerned in saving human life was carried out, and for that reason it did not include many interesting matters which might otherwise have been illustrated. Large screens were used for the display of charts and photographs. The series of photographs was extensive, some being furnished by the River and Flood Division, others by the official in charge at Galveston, and quite a number were from the storm warning stations in the Galveston district. Among the subjects represented were damage by storms and methods of distributing storm warnings by motor boat, by automobile, by motor cycle, and by rockets. As a center piece on one screen was shown Mr. Stewart's engraving of a copy of resolutions commending him for his work in life-saving at Galveston.

On one table were exhibited the standard storm warning lanterns of the bureau, one red and one white electric, and one red and one white oil-burning, all in operation. On another were displayed the automatic instruments of the bureau, consisting of triple register. wind vane, anemometer, and sunshine recorder wired up and in operation, the sunshine recorder by means of an electric lamp, the anemometer by means of an electric fan. The river gauge transmitter was so mounted that by pouring in or drawing out water the working of the instrument could be shown for the information of visitors. The

barograph and thermograph as well as barometers were also exhibited. In an overflow exhibit in an adjoining room were a series of charts showing the track of a West India hurricane, and the means taken for giving warning in advance of its approach, and also a remnant of a storm warning flag that was displayed during the recent New Orleans hurricane.

Forest Service.—The Forest Service exhibit was designed to bring out the features of Service work which have to do specifically with the conservation of life and property, namely, forest fire prevention and watershed protection.

During the past 50 years more than 3,000 lives have been lost in forest fires in the United States. Over $25,000,000 worth of standing timber is destroyed annually by fire; and this does not include the damage done to young growth, the injury to industries dependent upon the forests, or the loss in productiveness of burned-over areas. As a calamity a great forest fire ranks well with flood and famine. To prevent loss of life and of public property under its charge from this source, the Forest Service has established a comprehensive system for detecting and fighting fire in the National Forests. In the exhibit this system was explained by means of bromide enlargements, transparencies and models, and by some of the actual instruments and tools used in fire protection work. Pictures showed forest fires burning and large areas of valuable timber laid waste by flames. A view of the town of Wallace, Idaho, after its partial destruction by a forest fire, brought home the fact that such conflagrations are a menace not only to the rural population, but to the people of towns and cities as well. A picture of a lookout house on the summit of Mount Eddy, Cal., showed one of the many stations situated on high points in the National Forests, connected by telephone with supervisors' headquarters, where a constant watch is kept for fires during seasons of greatest danger. Other views illustrated how a brush fire is fought with shovel, ax, rake and spade; how trails in the National Forests, cleared on either side of inflammable material, serve as fire-breaks; and how wide fire lines are cleared in the forests wherever practicable.

How brush is piled and burned after logging on a National Forest timber sale area as a means of disposing of inflammable material was represented in several transparencies and bromides. The use of the heliograph for reporting fires and the employment of fire towers, lookout houses, telephones, and tool boxes, with their fire-fighting equipment and emergency rations, were also illustrated. An actual tool box was displayed as well as a model of a fire tower in miniature. Two types of the portable telephone which forest rangers carry, and with which they can tap the main telephone line at any point for the purpose of reporting a fire, and the type of iron box outdoor tele-

phone used on exposed situations on the National Forests, were likewise exhibited.

The results which follow denudation of a watershed were illustrated by a working model, showing the action of rainfall on forested and deforested hillsides. The model was made up of two hills of equal size and of the same kind of soil situated side by side, one of which was covered with moss, litter and twigs to represent the forest cover on a mountain side, while the other was left bare to represent a slope denuded by fire. Water was sprinkled in equal volume on each of the hills. On the forested mountain the water was absorbed by the litter, which permitted it to sink into the ground and feed the springs or to run off gradually, free from sediment, into a stream and a lake in the foreground of the model. On the deforested mountain the water ran off immediately, eroded the slopes, filled the stream channel and lake, as well as a storage reservoir, with sediment, and caused destructive floods in the lowland. This model was supplemented by a series of six other models showing how destructive lumbering sooner or later results in the mountain slopes becoming entirely denuded, with the resultant evils of rapid runoff of rainwater and erosion, while under conservative lumbering the protective cover on the slopes remains intact and a new and better timber growth takes the place of the old.

On watersheds in the National Forests where fire has destroyed the ground cover, young trees are being planted as fast as practicable. There were several pictures of such reforesting operations, while others illustrated how the young trees intended for planting are grown in National Forest nurseries. A transparency showed forest land where the ground had been made bare by overgrazing, the young trees destroyed, and the soil loosened, conditions which, by the restriction of grazing on important watersheds, are not permitted to occur on the National Forests. A chart indicated, by States, the number of watersheds within the National Forests.

An automatic slide projecting machine, showing 104 slides and descriptions side by side, told a continuous, illustrated story of Forest Service activities in the conservation of life and property. The National Forests afford recreation grounds for a million and a half people annually, and several pictures illustrated this feature of their use.

Animals which prey on livestock cause the loss of thousands of head each year, and of late the spread of rabies among wolves and coyotes has brought danger to the population of large areas in the West. The Forest Service, in cooperation with the Biological Survey, systematically destroys predatory animals, 5,000 having been killed on the National Forests last year. Three pictures illustrated this work.

A model of an ideal National Forest, measuring 5 by 6 feet, brought out in miniature many of the activities which have been described, and, in addition, the various other uses of the National Forests, such as the sale of timber, grazing of livestock, the lease of water power sites, and the construction of bridges, trails, roads, telephone lines, fire lines and lookout houses. Near this model, a map of the United States indicated where the 153 National Forests are situated. A chart of "Seven Don'ts" for fire prevention was prominently displayed, and a large colored bromide showed ideal conditions in a mountainous country with the slopes in forest and the level lands under cultivation.

DEPARTMENT OF COMMERCE.

Bureau of Standards.—Almost every branch of activity of the Bureau of Standards has a part in the solution of some safety problem and, further, the duty of testing materials and devices for other Government branches brings the bureau closely in touch with their specific safety problems also. In order to show most clearly to the interested visitors, in the limited space occupied by the bureau, the more prominent fields covered by its safety work, through its Washington and Pittsburgh laboratories and its field inspections and cooperative studies, its exhibits were grouped under six principal headings and an index of them was displayed at the entrance to the room in which they were installed.

The principal safety investigations are those dealing with the hazards of, 1, marine transportation, 2, land transportation, 3, building and bridge construction, 4, commercial applications of electricity, 5, commercial applications of gas, and 6, lightning.

Under the first title, a radio fog-signalling device, invented and developed by a member of the bureau staff, was shown in operation. By means of this equipment a predetermined signal may be transmitted automatically and those in charge of a ship equipped with proper receiving apparatus be thus warned of their proximity to dangerous locations. By the use of other equipment developed at the bureau, the direction of the station from which the warning signal is being transmitted may be determined and the protection afforded marine transportation is thereby rendered much greater than formerly, particularly in thick weather, when other signals are inadequate. The decremeter, invented at the bureau and built by it for the Bureau of Navigation, was also exhibited. This instrument is used by the latter bureau in its administration of the radio laws to determine if a station causes interference to signals when transmitting, and the instrument thus becomes a very important safety device. A chart illustrating some of the conclusions arrived at by the Bureau of Standards in its study of fogs at sea attracted much attention. It included the results of a number of observations which indicated that

many such fogs extend so slight a distance above decks that signals properly located at the mastheads of approaching vessels should be readily observable by lookouts in the rigging of a ship, and collisions thus prevented.

Closely allied with safety in marine and land transportation is the fusible safety plug for steam boilers, which also has a very extensive use in stationary boilers. The fusible element is tin and, unless this is of very high grade and proper care is taken in preparing it, the operation of a plug becomes unreliable. The bureau has conducted an extensive investigation of these devices and samples of that work were exhibited. The research disclosed the information that unless tin of the proper degree of purity is used, changes in the composition of the fusible material may take place within several months, probably raising its melting point and thereby destroying its usefulness as a safety device. Recommendations have been formulated covering the inspection and testing of these plugs in order to prevent possibilities of improper performance. It has been noted, with surprise, that the practice is apparently current among boiler tenders of stopping up leaking fusible plugs with infusible materials, such as plaster of Paris. Such a practice prevents the proper operation of the device and its existence clearly indicates the necessity for very thorough field inspection.

The exhibit dealing with the second and third items included photographs illustrating some of the heavy mechanical tests made on building and bridge members by the bureau, together with a steel column specimen which had been tested. From the point of view of safety in structures these tests, carried on in cooperation with the American Society of Civil Engineers, are of great importance as the present data relative to the strength of such materials are meagre. Included with this exhibit were several fragments of steel railroad rails, which had been investigated because of their failure in service, and an elaborate display of photographic studies of the structure of such defective rails.

Also, in connection with safety in land transportation, results of the bureau's study of railway signal glass were demonstrated. This demonstration particularly emphasized the necessity for confining the spectral transmission of such glass to a particular portion of the spectrum in order to eliminate accidents through confusion as to the actual color of signals. By comparing samples of glass which improperly transmit certain unintended colors of the spectrum with other samples of glass having proper characteristics, it was strikingly shown how important this subject is in safety of transportation.

Under the third heading, building construction, in addition to what has already been noted there was included an exhibit illustrating the bureau's investigations relating to fire resistive properties of struc-

tural materials. This was limited to a few pertinent photographs showing the necessity for these investigations, a special collection of pictures indicating how the ignorance and carelessness of the public contributes to the fire loss, and two charts. The first chart, after briefly explaining the enormous yearly property and life waste, gave the objects of the bureau's present work and the investigations under way, illustrating furnaces now being built. The other chart told what the public could do to diminish the fire waste and enumerated "12 Fire Don'ts," the observance of which would eliminate a large percentage of this waste.

The display of national standard fire hose couplings, developed at the Bureau of Standards, received much favorable comment. The interchangeability between different cities of fire-fighting equipment is a very important matter at times of extended conflagrations when outside aid is necessary.

The investigations carried on at the bureau concerning concrete were shown by several specimens, together with samples of cement illustrating the results attained by using the "Air-separation-method," invented and developed by one of the bureau's staff. The commercial application of this method would insure a much higher grade of cement, through the elimination of inert material, and at the same time permit a more complete grading, as to size, of the cement particles. A drawing in explanation of this method of air-separation as employed at the bureau formed a portion of the exhibit, and several photographs setting forth the bureau's study of injuries to reenforced concrete due to electrolytic action were also shown.

The fourth subject of general investigation conducted by the bureau, the electrical life hazard, was illustrated by means of a chart outlining the four parts of the national electrical safety code which the bureau has prepared. This code treats of the methods of construction for stations, lines and utilization equipment, together with operating rules for electrical workers. In connection with this chart was another indicating the nature of the various forms of electrical accident which conformity with the code would prevent. There was also given a list of the several national technical associations and public bodies which have cooperated with the bureau in the preparation of the code. Maps prepared to show the distribution and number of accidental fatalities due to electrical causes in the United States for two years were likewise a part of this exhibit. These were based on reports from the Bureau of the Census and were subdivided so as to indicate fatalities to electrical workers and the general public. At present the deaths due to this cause exceed 1,000 annually, and a great proportion of this number could be prevented by compliance with the rules of the code. Another chart gave twelve simple precautions to be observed by the public when in the

vicinity of electrical equipment. A series of photographs illustrated well-constructed overhead electric transmission lines, as well as overcrowded lines which had failed due to heavy loading from wind and snow. An extensive display of various types of electrical switch and fuse cabinets, for indoor and outdoor service, represented methods by which persons may be safeguarded by permitting the enclosure of live parts even during their operation. A selection of insulated tools, covers and other devices indicated various ways in which workmen may be protected while about electrical equipment or on overhead lines.

The investigations in connection with the hazards to life due to gas were brought out through the medium of a chart which outlined the principles of the gas safety code now under preparation by the bureau. This also included a list of typical fatal accidents which could be prevented by conformity with the code, as well as a list of those bodies which are cooperating with the bureau in this work.

Under the heading of "lightning hazards" was shown a chart stating the annual life and property loss in the United States due to lightning. It likewise furnished information on means for prevention and on precautions to be observed by the public in order to minimize the liability of injury from this cause. Several displays of lightning rods and photographs of lightning discharges brought forth favorable comment.

Besides the exhibits grouped under the foregoing headings, several other lines of the bureau's investigations were represented. The use of lead and lead coloring materials is very harmful to workmen engaged in making glazed colored building tile. The ceramics work of the bureau was illustrated by an attractive display of tile with colored glaze free from lead, and there was also shown a sample of white glazed enamel made at the bureau laboratories for use on iron or other similar materials. This latter is of considerable importance as the enamel freely expands or contracts at the same rate as the iron on which it is applied and thus does not readily crack when repeatedly heated or cooled. It is, therefore, an important material for safety to public health through use in refrigerator linings, enameled sinks, cooking utensils, and numerous other applications.

The chemical work of the bureau was illustrated, in so far as it directly relates to safety, by a chart outlining various substances under investigation to determine the liability of their causing explosions or fires when in transit or contained in warehouses. Work of this character, while not lending itself so readily to exhibition methods as many others, is of great basic importance in leading to results tending to reduce fire and explosion dangers and thereby making transportation and storage more secure.

Bureau of Lighthouses.—The work performed by the Lighthouse Service in the saving of life and property consists mainly in safeguarding to navigation the navigable waters of the United States, including the outer coasts and the rivers and lakes. To accomplish this, there are in commission at present over 14,500 aids to navigation, including lighthouses, light vessels, fog signals, buoys and daymarks.

The most conspicuous feature of the lighthouse exhibit was a fourth order flashing lens in actual operation. The incandescent oil vapor lamp regularly used with this lens in service was displayed at one side and a small electric bulb substituted for demonstration purposes, as the 37,000 candle-power beam of light emitted when the former is employed would have been blinding to spectators. The purpose of the flashing lens for lighthouses is to furnish a light having a definite characteristic, enabling the mariner to positively identify the station and avoid the dangers incident to mistaking one light for another. By varying the arrangement of the lens panels and the time of revolution an unlimited number of characteristics may be produced. The driving mechanism, or clock, is operated by a falling weight and regulated by a friction governor which controls the speed very closely. Safety devices are used in connection with the lens to warn the light keeper when the apparatus is not in proper working order. One of these, a thermostat alarm, is placed above the lens and so adjusted that when a predetermined maximum or minimum temperature at a point just over the lamp is reached an electric bell is sounded, thus indicating that the lamp is too high or too low. Another device is attached to the clock which also rings an electric bell when the driving mechanism is operating too slowly.

The constantly increasing use of electricity, especially at non-attended stations, has resulted in the development of the electric lamp substituting device, which formed a part of the exhibit. The purpose of this apparatus is to automatically substitute another electric lamp in the focus of the lens, should the one in service burn out or break. This device is simple and positive in operation and provides two reserve lamps, thus materially increasing the efficiency of the station and reducing the chances of the light being out of commission.

The 6-inch automatic siren is one of the most powerful fog signals in use by the Service. It is operated by compressed air and is employed as a warning to mariners when the visual aids to navigation are obscured by fog or thick weather. Its note can be heard under favorable conditions for more than ten miles. The 8-day post lantern is a minor aid to navigation, and is especially designed to prevent the light from being extinguished in stormy weather. The lamp has two flat wicks and burns oil which is fed to the lamp from a reservoir containing a supply sufficient for a continuous burning of the lamp for 8 days.

Coast and Geodetic Survey.—The exhibit of the Coast and Geodetic Survey was planned to show in a popular manner the value of the nautical chart in preventing loss of life and property on the seas and inland waters. While it might have been limited to copies of charts with the announcement that by their use the navigator is enabled to locate the safe channels and waters and avoid the dangerous rocks and shoals, yet, as the work of chart construction is technical and the value of the chart is but vaguely understood by the public, it was deemed advisable to go somewhat into detail in regard to both of these matters. One of the most conspicuous placards showed that the chart is needed for safety first, because the travelers on steam vessels alone number over 300,000,000 annually; the value of commercial and naval vessels owned by the United States is over $1,000,000,000; the value of imports and exports of the United States is over $3,700,000,000 annually. Under this placard was placed a model of the wire drag which has located so many of the dangers that menace navigation. Another equally conspicuous placard stated that the chart shows for safety first safe channels and waters; buoys, beacons and land features for safety in daylight navigation; lights for night navigation; fog signals to guide when lights, buoys, beacons, land and sky are obscured; character and depth of water with dangers at all points to enable vessels safely to resume course if blown out by storm; variation of compass; tides and currents. Nearby were copies of charts by which the visitor could easily verify the statements made on the placard.

Inside of the booth on which the above were displayed were other large placards indicating by sketches and descriptions the evolution of the chart from the starting point in the field to the finished print. In front of each were arranged the instruments, etc., which are most prominently used in the work described. For determination of latitude and longitude, the meridian telescope, chronometer and chronograph were shown; for magnetism, the magnetometer; for triangulation, a base tape with attachments and the theodolite; for topography, the planetable, alidade and stadia rod; computing, a computing machine; compilation and drawing, a compilation sheet and a smooth drawing; engraving, the engraved copper plate; electrotyping, the "alto"; printing, prints direct from copper, by transfer from copper to aluminum and direct from drawing to aluminum. An aluminum plate was also included.

Among the charts were one of New York Harbor indicating the corrections necessary during one year; others showing changes in shore line that have occurred at New York Entrance, Assateague Anchorage and the Mississippi Delta; and typical charts of Portland Harbor, Boston Harbor, New York Entrance, Delaware Bay, Baltimore Harbor, Hampton Roads, Galveston and Port Arthur. A

model of Rock Creek Park illustrating the topographic work of the Survey attracted more than ordinary attention.

Bureau of Navigation.—The Bureau of Navigation exhibited a complete ship radio station, which consisted of a half kilowatt, type P, Marconi set, and 90 cells of Edison storage battery, type B4H–WS. This type of apparatus is installed on a number of the coastwise vessels, and has been found very efficient. The transmitter is arranged for three wave lengths—300, 450 and 600—which can be changed from one to another by the operation of one switch. It is supplied with a quenched gap and a rotary synchronous gap, either of which may be used by the changing of a switch. The parts which are liable to become defective are furnished in duplicate. A kit of tools with which the operator may make any necessary repairs, was also a part of the outfit. The present law requires "an auxiliary power supply, independent of the vessel's main electric power plant, which will enable the sending set for at least four hours to send messages over a distance of at least one hundred miles, day or night, and efficient communication between the operator in the radio room and the bridge at all times." The auxiliary power in this case is the Edison battery referred to above, which is of sufficient capacity to operate the transmitting apparatus as required by law, and also furnish power for lighting a number of emergency lights located in the passageways and on the decks of the vessel, as well as at other points where such lights are a necessity. The operation of the set was demonstrated during the exhibition, the transmitter being disconnected from the antenna to prevent interference. The receiver, however, was connected to a temporary antenna which made it possible to receive signals from Arlington and stations along the Atlantic coast. The time signals and weather reports were received daily at noon and at 10 o'clock at night.

In addition to the above there was shown in operation a Marconi induction coil, commonly known as a 10-inch coil, which was used for a considerable length of time as the principal transmitting apparatus on a large number of the transoceanic vessels and is now extensively employed as an auxiliary or emergency apparatus on many foreign ships. The steamship *Carpathia*, which went to the rescue of the *Titanic*, was equipped with this type. The use of the induction coil as an auxiliary on American vessels has, however, been discontinued, as the late model of the Marconi apparatus now being supplied has been found far more efficient.

Kolster decremeters, types A and B, were also exhibited. Type A, being a later development, is much lighter, more compact, and has a wider range of usage. The type B instrument is used for measuring wave lengths and decrement of transmitting stations requiring a

license, and has been employed by the Department for this work for more than three years. Type A, which is not yet in use, measures the wave lengths and decrement of ship stations, small experimental stations and amateur stations. In addition, the hot wire indicating instrument is so arranged as to make it possible to measure the voltage of storage batteries from zero to 7 volts and from zero to 150 volts, and the antenna current from zero to 25 amperes. The weight of this instrument is about one-third that of the instruments now used for the performance of this work.

The omnigraph, likewise represented, is a mechanical transmitter, sending the signals in the international or continental code, and is employed to give the code test in connection with the examination of radio operators, who, prior to operating a transmitting station, are required to pass an examination and secure a license.

Interesting pieces of obsolete apparatus displayed were the following: Gooseneck break key, one of the first keys used for breaking the antenna to coherer. Plain aerial receiving jigger for transformer, employed on American line ships in the early days of wireless with coherer set. Decoherer set complete, also belonging to the early days. Triple node X stopper or selective tuning device; used with magnetic detector for receiving, without use of ground, up to 180 meters on tune A. Oscillation transformer, the first made in America; built in 1902, for transmitting. Telephone employed in making tests on magnetic detector in the early wireless days. Magnetic detector; receiver in use following coherer sets.

Steamboat Inspection Service.—The objects of the Steamboat Inspection Service are to secure the safety of vessels, or to prevent the loss of life and property on board of vessels subject to its jurisdiction. Among the means resorted to are inspection of hulls, inspection of boilers, life-saving appliances, fire apparatus, equipment for signaling to other vessels, equipment for navigation, requiring officers to be licensed after sufficient experience and passing examination, rules for vessels in passing each other, and placards. The exhibits illustrating these several topics were as follows:

As relating to the inspection of hulls a blue print of a hull and a ship's auger bit were shown. The former or a drawing, together with the dimensions and a description of all of the principal parts of the hull, in the case of vessels of over 100 gross tons, require to be submitted by the owner for approval; the bit is used by the hull inspector to determine the condition of the wood by boring where necessary.

Pertaining to boiler inspection were a blue print of a boiler, test pieces of marine boiler plate, three kinds of hammers, a standardized test gauge, a dead-weight standard test gauge, three kinds of gauges for measuring the thickness of boiler plate, marine boiler plates riveted together, large rivets, a safety valve, water glass, try cocks,

fusible plugs, and test pieces of lap-welded boiler plate. Under the rules and regulations, the manufacturer is obliged to furnish a drawing of a boiler for approval by the local inspectors before it can be used on a steam vessel, the boiler inspector making and recording all necessary computations. The test pieces, five in number, represented passed and failed tensile tests, failed in elongation test, and passed and failed in bending tests. Detected by the use of the hammer, were several kinds of defective and condemned boiler material and links of steering chain. The tests, hydrostatic and steam, are applied previous to the use of the boiler and at each annual inspection, the gauge for the latter being compared with a dead-weight standard test gauge in the office of the inspector. The safety valve was sectional to show the interior and manner of operation, while the water glass was fitted with pull chains as a further safety device, enabling the steam to be shut off at a distance from the valves through which the glass is supplied in the event of the breaking of the latter. The subject of fusible plugs was extensively illustrated. One was shown through the failure of which to fuse 11 lives were lost on the steamship *Jefferson*, leading soon thereafter to the requirement of a test of the filling of the plugs by the Bureau of Standards.

Of life-saving appliances many different kinds were represented. Every inspected vessel is required to carry a life preserver for every person allowed to be carried, and heavy penalties are provided against the use of metal in their manufacture. The following were shown: A standard block-cork life preserver, with all required stamps, which had been used successfully by a survivor of the steamer *Tivoli* burned in Chesapeake Bay on the night of November 26, 1915, with a sea running about 4 feet high. New balsa-wood life preservers, one for an adult and one for a child, and two condemned life preservers. A section of a compressed cork life preserver unlawfully containing iron to make up the required weight of cork. Two illustrated placards explaining the adjustment of life preservers, such as are required to be posted on passenger steamers. Of ring life buoys there were one of cork, one of balsa-wood, and one with an acetylene light attached, this last, for night use, igniting on contact with the water and burning at least 45 minutes.

The display of lifeboats and apparatus connected with their use included the following: Englehardt collapsible lifeboat, which is practically a life raft with framework and heavy canvas sides that may be lowered or raised, and bottom filled with cork. Lundin lifeboats attached to Welin davits with non-toppling blocks, and a model of the latter showing how boats may be carried directly outboard from the ship's side by mechanical means. The Binks' and Marten-Freeman lifeboat davits, and three kinds of boat disengaging

apparatus, by means of which both ends of the boat are disengaged simultaneously by one man in the boat. A catamaran life raft, showing the interior construction, the cross bulkheads in the cylinders and the air-tight compartments. The equipment required for lifeboats on ocean steamers, indicated by a large number of articles. Also exhibited in this connection was a full-size Coston line-carrying gun with shot and line and full equipment, designed for throwing a line ashore from a stranded vessel or to another vessel, and for rigging the breeches buoy, etc.

Among the fire apparatus were hose, nozzle and blow-off valve, fire extinguishers, fire buckets, a water barrel and axes, and large photographs of fire pumps. The signaling equipment included a steamer's whistle, a mouth and a mechanical fog horn, a ship's bell, steamer's lights, and a collapsible black ball, which indicates that a steam vessel with funnel up is proceeding under sail only.

The equipment for navigation consisted of a compass, sextant, chronometer, patent log, hand lead and line, aneroid barometer, binocular and psychrometer. The last mentioned, consisting of wet and dry bulb thermometers, besides being useful for foretelling storms, is employed for determining the position of a vessel with respect to currents, icebergs and land. There were finally displayed the license forms issued to masters, mates, pilots and engineers, and the forms of certificate of efficiency to lifeboat men and of service as able seamen.

Though not included in the classified scheme of arrangement, this bureau exhibited a beautiful model of the steamship *Howard*, of the Merchants and Miners Transportation Company, running between Baltimore and Boston.

DEPARTMENT OF LABOR.

Bureau of Labor Statistics.—The principal feature of the exhibit of this bureau consisted of two groups of charts showing some of the more significant results of the bureau's current investigations of industrial hazards. The first group presented data regarding accidents and accident prevention in the iron and steel industry, while the second was concerned with the subject of early deaths—i. e., under 45 years—in the cotton manufacturing industry. In addition, there were several albums picturing safety devices used in the iron and steel industry, publications of the bureau relating to accidents and mortality, and a list of the publications upon these subjects contained in its library.

For a number of years the bureau has been conducting investigations of accidents in selected industries, reports of which have been published for the metal trades and for the iron and steel industry. A report on accidents in the machine-building industry is nearly

ready for publication, while a second and more comprehensive one for the iron and steel industry is in preparation. The charts on accidents and accident prevention were based largely upon data from the forthcoming iron and steel report with some comparative data from the machine-building report.

Of the 12 charts exhibited, the first four gave the results obtained in certain iron and steel plants where the efforts toward accident prevention had been most successful. Chart 1 showed for one large plant a gradual reduction of accident frequency from 370 cases per 1,000 employees in 1905 to 115 in 1913. Chart 2 indicated that this reduction occurred in all departments of the plant. Thus, the rate in blast furnace operations decreased from 429 to 132; in steel works, from 364 to 196; and in the mechanical employments, from 387 to 65. Chart 3 brought out the experience of another large plant in which the reduction in frequency rates was even more striking—from 323 in 1907 to 88 in 1913. Chart 4 contrasted conditions in a plant poorly organized for safety with one that was well organized. In the former the accident frequency rate was 510; in the latter, 134.

Charts 5 and 6 presented a method of calculating what are called "severity rates," based upon the economic time loss resulting from the various disabilities. Charts 7 and 8 were concerned with the causes of injury, and the frequency of injuries from various causes was contrasted with the severity of such injuries. Thus, falling and flying objects were shown to be responsible for 27 per cent of the injuries covered but caused only 23 per cent of the time loss. Cranes and hoists, on the other hand, with 9 per cent of the cases, caused 13 per cent of the time loss. In chart 9 the nature of injury was analyzed in a manner similar to that used in the analysis of causes of injury. Chart 10 elucidated the relative hazards of workers able to speak English and those not able to do so, as developed in the experience of one large steel plant. It was shown that the non-English speaking worker has the higher accident rates, both as to frequency and severity, and that the reduction in his accident rates has been much less rapid than in the case of the English speaking worker. Charts 11 and 12 brought out the relative hazards of day and night employment in a large steel plant. For each year of experience and for each department the accident rates for night work were shown to be higher.

A report upon the mortality of woman and child workers in the cotton industry has been published by the bureau, and a more comprehensive study of the death hazards in this industry, based upon investigation of all deaths in a large cotton manufacturing city over a period of several years, is now being prepared. This study is concerned primarily with the death hazard at early ages, the age of 45 years being taken as a conservative limit, the purpose being to ascer-

tain the prevalence of such deaths and to analyze their causes. The charts relating to death hazards in the cotton industry were based upon data developed in this connection.

It is believed that the subject of death hazards at early ages may, with entire propriety, be included under the general subject of safety. Whatever its form, death under the age of 45 is, in an important sense, accidental. That is to say, it is not due to a normal deterioration of vital powers but to more or less fortuitous circumstances, and very frequently, among wage earners, to distinct industrial conditions, such as unhealthy surroundings, unsafe work, industrial poisons. Death under such circumstances can be guarded against in very much the same manner as ordinary industrial accidents are guarded against. Its occurrence, indeed, may even be considered an industrial accident, using that word in a broad sense.

The four charts exhibited presented data regarding death hazards as related to the factors of age, sex, race and workroom. All made a separation of tuberculous and non-tuberculous causes of death. The chart on age showed that the greatest hazard from tuberculosis is at a somewhat higher age among males than among females. The chart on sex showed that, among married females under the age of 45, those working as cotton operatives have a very much higher death rate from both tuberculous and non-tuberculous causes than do non-operatives, and than prevails among males both operatives and non-operatives. The chart on race showed the death hazard to be highest among the Irish, both male and female, tuberculosis being a particularly significant factor. The chart contrasting the death rates in the different workrooms of the factory indicated that the hazard, as a whole, is greatest in the spinning room, but that for females the hazard from tuberculosis is slightly greater in the card room than in the spinning room.

Children's Bureau.—The main purpose of the exhibit of the Children's Bureau was to show the need for well-organized and continuous safety first campaigns, and to suggest that the best results are to be obtained by beginning this organization work with the children. Every child should grow up to enjoy manhood or womanhood, and there are good reasons for believing that instilling the rule of safety first in the minds of the children will assist in abolishing that by-product of our community life—the cripples and helpless wrecks who might have been strong men and women.

The arrangement of the exhibit was planned so as to bring home to the parents a realization of the dangers which surround their children in the home and on the street. Attention was also directed to the desirability of instilling in the minds of children the necessity for thinking and acting along lines of safety and caution in the home, on the street, and in the shop. The seriousness of the child street-

accident problem was illustrated in order to show the necessity for some solution and to make people realize how unprepared they have been, and still remain, for the rapid growth of the modern large city.

The exhibit consisted of panels, photographs, bulletins, colored posters, lantern slides accompanied by lectures, and motion pictures.

The panels were six in number and related to as many subjects, as follows: *Prenatal care.*—Illustrating the necessity for the exercise of caution by expectant mothers, by showing the health needs of these mothers and the results of neglecting to provide for these needs. *Birth registration.*—Showing the necessity for safeguarding and protecting the baby's rights by the official registration of its birth. *Food.*—Illustrating the importance of care in the matter of the baby's food and the reasons why breast feeding is best; a comparison of the results of artificial and breast feeding. *Ventilation.*—Contrasting the results of safety first and neglect in the ventilation of baby's bedroom. *Ignorance and poverty.*—Showing the difference in baby death rates in two different parts of the same town, and illustrating the fact that education and living wages for parents are essential to insure safety for their children. *Employment of mothers.*—Illustrating by diagrams and pictures the effect upon the baby of the failure to apply the principles of safety first in the matter of the employment of mothers immediately before and after childbirth.

Sixty-three safety bulletins were exhibited. Many of these were illustrated and were suitable for posting in public places, schools, street railway stations, etc., to call attention to dangers from accidents on the streets, in the homes, and in the shops. There were 17 brilliantly colored posters and 12 black and white picture posters, with effectively worded titles illustrating in striking manner some of the commonest street accidents to children.

Twelve photographs showed some of the methods used in various communities for the prevention of accidents to children. A gallery of injured child workers contained 8 photographs of children who had received permanent partial injuries while engaged in industrial occupations in Massachusetts, with explanations of how the accidents occurred, and some illustrations of safety devices to prevent similar accidents.

A series of the bureau's publications, which deal with such subjects as prenatal care, infant care, baby-saving campaigns, etc., with an explanation of the method of obtaining copies and of how to be placed on the bureau's mailing list for future publications of a similar nature.

The lantern slides exhibited in the auditorium on February 24, Department of Labor Day, comprised 50 illustrating safety devices for insuring healthy babies, and 54 depicting the various kinds of street and home accidents which are happening to children every

day. The slides were explained by Mr. Bennet Mead, who also told of the devices for preventing similar accidents. On the same day, through the courtesy of the Washington Railway and Electric Company, which had leased the reel from the Vitagraph Company, this bureau was able to exhibit a motion picture entitled "The price of thoughtlessness," illustrating street accidents to children and the methods which the Brooklyn Rapid Transit Company is employing to organize the children of Brooklyn for the purpose of stimulating thought and study on the best means of accident prevention.

INTERSTATE COMMERCE COMMISSION.

The exhibit of the Interstate Commerce Commission included three perfect model cars fully equipped with all the safety appliances required by the Commission's order of March 13, 1911, a small model locomotive boiler arranged so as to illustrate the water circulation, as well as a number of excellent charts graphically setting forth the relative decrease in the number of casualties to railway employees since the passage of the Federal Safety Appliance and Boiler Inspection acts.

A model block signal system about 25 feet in length, illustrating the protection provided for by such a system, was in full operation. The model had two sidings and the system on exhibition was designed particularly to represent single track operation. Intermediate signals were shown between the block signals by means of lights, and the model was fully equipped with standard relays used with direct current operation and worked perfectly. Failed material that had been the cause of quite a number of accidents investigated by the Commission on account of transverse fissures in steel rails, as well as failed car wheels and failed bridge material, and material from failed locomotive boilers, were on exhibition. In addition to the failed material that had caused accidents a great number of test pieces that had been used in metallurgical work were also shown. Model couplers of a great many of the different types used on railroads, as well as emergency knuckles and other parts that are necessary in making repairs in case of the failure of the couplers, were likewise displayed.

Two hundred stereopticon views illustrating many of the accidents investigated by the Division of Safety and the Boiler Inspection Division of the Commission, shown on screens, were very instructive in elucidating the behavior of different types of equipment in various kinds of accidents, and what the improved equipment accomplished in reducing accidents.

METROPOLITAN POLICE DEPARTMENT.

The Police Department of the District of Columbia made a very effective display of its methods for securing safety on the streets of

Washington. These related chiefly to the regulation of traffic at street crossings and other places in congested sections of the city, and included several kinds of signal apparatus, some of which had been recently designed by the department. In the latter the colors green and red, spelling safety and danger, respectively, were used as well as the words "Go" and "Stop," and for the benefit of those who are color blind the green flanges were deeply notched at the end, while the red flanges were rounded. For night the colors are displayed in the form of a lantern. Among the placards was one reading "Street closed during recess," the embodiment of a comparatively recent safety first idea in connection with schools whose pupils are compelled to play in the street. The exhibit also included a model of the river police boat *Vigilant*, and others of the appliances used by the police to drag the waters of the District.

AMERICAN NATIONAL RED CROSS SOCIETY.

The first aid work of this society and its activities in times of calamity were illustrated by means of apparatus, models, and pictorial representations, forming, naturally, an interesting and instructive exhibition.

CENTENNIAL EXHIBITION BY THE COAST AND GEODETIC SURVEY.

The exhibition made by this Survey in connection with the exercises commemorating the one hundredth anniversary of its organization, held in the auditorium on April 5 and 6, 1916, was one of the most complete and instructive special displays ever installed in the Museum. The entire central hall in the ground story of the new building was utilized, giving ample space for an open and symmetrical arrangement, convenient for the visitor and attractive in appearance. The exhibition continued from April 5 to 10, was kept open during the evening of the first day, and served in a measure to illustrate the papers presented at the meetings. The following account is furnished by the Survey.

Briefly, the exhibition consisted of samples of the products of the bureau, the tools with which these products were made, and views of the processes.

The development of each particular instrument and process was illustrated, as far as possible, by the oldest and newest types of instrument or apparatus which have been and are now in use in this bureau, and by photographs or cuts showing the methods of using these instruments and appliances. Charts and maps were given a prominent place in the exhibition, and nearly all types which are now issued, or have been issued in the past, were included.

The instruments were arranged along the left side of the hall as approached from the street entrance. They were grouped in accordance with the particular kind of work for which they are used,

an effort being made to take up each step in the gathering of data for chart making in its logical sequence. The first group consisted of field astronomical instruments; the second, of magnetic surveying instruments; the third, of base measuring and triangulation instruments; the fourth, of hydrographic surveying instruments, including apparatus for recording and predicting tides; the fifth, of topographic surveying instruments; and the sixth, of leveling and gravity measuring instruments. The fifth group should have preceded the fourth in order to preserve exactly this program but the other arrangement was better suited to the space.

The charts and maps were fastened to screens and were arranged along the right side of the hall in two rows. As far as possible the oldest obtainable chart was placed beside a recent Coast and Geodetic Survey chart of the same locality. The knowledge of the coast of the United States before the creation of the Coast Survey was shown by a volume of the Atlantic Neptune, which contains about the best set of charts of that date.

The work of the officers of the Coast Survey during the Civil War was shown by a series of maps, sketches, and tracings which were prepared by these gentlemen for military purposes while attached to the staff of the various military and naval commanders.

The methods of printing charts were illustrated by an engraved plate and by a lithograph plate and stone. These were placed with the chart exhibit.

The progress of the surveys to date was shown by several base maps of the United States and possessions upon which the present extent of the surveyed areas was indicated in colors. These maps too were included with the charts on the right side of the hall, as were also several tables of statistics and various publications, including a full set of the Superintendent's annual reports, and samples of field and office records.

A set of more than one hundred enlarged prints from the collection of negatives in the office and from several private collections was displayed in cases arranged along the central line of the hall. These photographs depicted methods of transporting field outfits, usual and unusual methods of surveying, and camp and ship life.

On the columns, on each side of the hall, beginning at the first column on the left and ending at the first on the right, were hung in order of service, the photographs of the past Superintendents of the bureau.

The decoration of the space was confined to three spans of flags extending across the central aisle with the name of the bureau and the dates, 1816–1916, suspended against the first set of flags. The first span consisted of the Coast and Geodetic Survey flag and the Superintendent's flag; the second span, of two national ensigns; and the third span, of two Coast and Geodetic Survey flags.

A supply of each of the following publications, together with a program of the exercises held in the auditorium, were freely distributed: The work of the United States Coast and Geodetic Survey; Military and Naval Service of the United States Coast Survey; and the special chart of San Francisco, which was prepared for the Panama-Pacific International Exposition. Other publications were supplied on request, or if not on hand in sufficient quantities, were mailed from the office.

FRANCIS SCOTT KEY MONUMENT COMPETITION.

By an act of Congress approved July 29, 1914, the sum of $75,000 was appropriated for the erection at Fort McHenry, Baltimore, Md., under the direction of the Secretary of War, of a monument in memory of Francis Scott Key, author of the Star-Spangled Banner, and the soldiers and sailors who participated in the battle of North Point and the attack on Fort McHenry in the War of 1812. Sculptors of established reputation, citizens of the United States, and architects whom they might associate with them in their work, were invited to submit designs. Thirty-four models, accompanied by drawings, were received, all of which were installed in the rotunda of the new building, as affording the most satisfactory accommodations available for their exhibition. Their arrangement was completed on May 2, but not until May 17, after the competition had been judged and the awards made, was the hall opened to the public, the models remaining on view until June 17.

Executed on a scale of 1½ inches to the foot, the models quite fully occupied the rotunda floor, but notwithstanding this somewhat crowded condition the installation proved exceedingly effective, and its appearance was greatly enhanced by the presence of the actual Star-Spangled Banner, the flag that flew over Fort McHenry during the momentous battle of September 13 and 14, 1814, which was suspended from the upper gallery. The openings between the surrounding piers and columns were filled with tall palms, while an appropriate label for the flag and cards containing verses from the song of Francis Scott Key, framed in natural laurel leaves, were attached to the balustrade of the lower gallery.

This competition was one of the largest and most successful for a work of the kind that has ever been held in this country, and included designs of a highly artistic and meritorious character, four of which were given prizes and three received honorable mention. The first prize, carrying the acceptance of the design and the contract for erecting the memorial, was awarded to Mr. C. H. Niehaus, sculptor, of New Rochelle, N. Y., and Mr. E. V. Warren, architect, of Brooklyn, N. Y. The second prize, of $800, was accorded to Mr. F. H. Packer, sculptor, and Mr. Albert R. Ross, architect; the third prize,

of $500, to Mr. Henry Herring, sculptor, and Mr. Evarts Tracy, architect; and the fourth prize, of $400, to Mr. J. Massey Rhind, sculptor, and Mr. A. R. Ross, architect. Those who obtained honorable mention were Mr. C. A. Heber, sculptor, and Armstrong & De Gelleke, architects; Mr. J. E. Fraser, sculptor, and Mr. A. R. Ross, architect; and Mr. Edward Berge, sculptor, of Baltimore, Md., and Mr. A. R. Ross, architect. All of the sculptors and architects named, unless otherwise stated, are of New York City.

INDUSTRIAL ART—THE AMERICAN FEDERATION OF ARTS.

An important loan exhibition of industrial art, similar in character to that held the year before, was assembled in the new building under the auspices of The American Federation of Arts and opened with a special view on the evening of May 17, 1916, the first meeting day of the seventh convention of that association. It occupied, as in 1915, the large main hall on the ground floor, together with five communicating rooms, and was continued for one month. The arrangements on the part of the Federation, which issued a brief catalogue of the exhibits, were conducted by its secretary, Miss Leila Mechlin, while the installation was chiefly made by employees of the Museum under the direction of Mr. William H. Holmes and Mr. F. L. Lewton.

Both hand and machine work were shown, and about 70 exhibitors participated, including some of the best known workers in art craft in the country. While the exhibition was not as large or comprehensive as could be wished for, a fairly high standard was maintained and in some respects the results were very gratifying. That it was appreciated was indicated by the large attendance of visitors at all times.

The central part of the main hall was mainly given over to an idealized garden effect, with pools of water and foliage, cedar trees, and numerous examples of decorative sculpture displayed with architectural setting. The sculpture pieces, with the exception of two taken from the collection in the Museum, were lent by the Gorham Co., of New York. They included a copy of "Victory," from the Sherman statue in New York, and of "The Standing Lincoln" in Chicago, both by Saint-Gaudens; "Spirit of Life," a figure of the Trask memorial at Saratoga, N. Y., by Daniel Chester French; "Infant Burbank," by Herbert Adams; "A Garden Figure," by James Earle Frazer; "Sea Weed Girl," by Janet Scudder; "Water Lily Mermaid," by Isabel Kimball; "Multonomah," by Herman A. MacNeil; "Pan of Rohaillion," by Frederick MacMonnies; and "Esmeralda," a piece of marble from the National Gallery, by Romanelli.

Except for 4 cases near the entrance, 2 of which contained a selection of lamps with variously colored and decorated shades, kept lighted during the hours of opening, and 6 cases at the southern end of this central space, the exhibits in the hall were arranged at the sides, between and adjoining the large piers and along the walls, and were as follows:

The pottery display was perhaps the largest and most notable. It included a fine collection of vases and tiles from the Pewabic Pottery, at Detroit, Mich.; 54 pieces of their artistic ware, from the Van Briggle Tile & Pottery Co., of Colorado Springs; 5 pieces of Byrdcliffe pottery, from Miss Penman and Mrs. Hardenberg; stoneware vases, jars, bottles, etc., from Prof. Charles F. Binns, of the New York State School of Clay at Alfred; a large number of examples from the Marblehead and Paul Revere potteries in Massachusetts, and the Newcomb Pottery at New Orleans; and bookends, lamps and vases from the Fulper Pottery Co., of Flemington, N. J. The Lenox Co., of Trenton, N. J., contributed a collection of china, fine both in texture and decoration; Mrs. Sarah Ryel Comer, of Dorchester, Mass., several cases of exquisite iridescent tinted glass and porcelain, in amber, copper blue, amethyst, green, yellow, etc.; the Tiffany Furnaces, at Corona, N. Y., a case of their beautiful favrile glass; and Dorflinger & Sons, of New York, examples of engraved, etched, cut, gilded, and painted glass.

The exhibit of metal work and jewelry, though restricted, was excellent both in design and workmanship. Karl Kipp, of East Aurora, N. Y., was represented by 4 pieces of hand-wrought copper; George P. Blanchard & Son, of Gardner, Mass., by silver spoons and forks and a mounted series showing 12 stages in the making of a hand-wrought spoon in sterling silver; Arthur J. Stone, of the same place, by 11 spoons and 2 silver bowls of exquisite design; and George E. Germer, of Boston, by a bronze cast of the Proctor Memorial Tablet at Princeton University. The jewelry, consisting of necklaces, pendants, pins, rings, cuff buttons and a silver jewel case, was from Frank Gardner Hale and Margaret Rogers, of Boston; Grace Hazen, of New York; Herbert Kelly, of Croton-on-Hudson, N. Y., and James H. Winn, of Chicago.

The contributions in the line of textiles and needlework included coverings, towels and centerpieces, from the Hearthside Looms, Pawtucket, R. I.; Italian, English Cripple School and Old Colony Union needlework, from the Old Colony Union, Bourne, Mass.; 9 pieces of embroidery, from the Scuola d'Industrie Italiane, New York; spreads, rugs, quilts and other objects made in the homes of the southern mountaineers, from the Southern Industrial Educational Association of Washington; examples of hand weaving and art dyeing and a hand

loom, from Neighborhood House, Washington; stenciled linen draperies and machinery embroidery on linen, from the United Arts and Crafts Workers, of New York; unbleached linen embroidered in colors, from Newcomb Memorial College, New Orleans; samples of stenciled textiles, from Miss Fayette Barnum, of New York; and hand-made lace in collars and bolts, from the Minnesota Lace Workers, Minneapolis, Minn.

Basketry of various shapes and designs was shown by Mrs. Helen T. Smith and Miss Mae Noel, of Washington. Mural decoration was represented by two paintings and three framed pictures of interiors, contributed by Louis C. Tiffany, of New York; and by a model showing the possibilities in that direction, sent by the Co-operative Mural Workshops, of New York.

All of the exhibits other than the above were installed in the several rooms. Room 38 was devoted to machine-made textiles. Rugs, handsome in design, contributed by M. J. Whittall, of Worcester, Mass., covered the walls; while in cases were shown silks, lent by F. Schumacher & Co., of New York, representing reproductions of early Italian and French designs; brocades from Cheney Brothers, of New York; and laces from the Quaker Lace Co., of Philadelphia. The last consisted of a representative collection of window lace, each number being selected with the idea of illustrating the various fabrics and design possibilities of modern machine-made curtain material. The exhibit was in two groups, one showing lace curtains manufactured to sell by the pair, the other "craft lace" made to sell by the yard.

Room 39 was given over to the exhibition of work done in some of the leading art schools of the country, which were represented as follows: The Pennsylvania Museum and School of Industrial Art, of Philadelphia, by examples of interior decoration, mural painting, furniture, illustration, cement work and modeling, costume design, pottery, tiles and mosaic, ironwork and design; the Teachers' College, Columbia University, New York, by designs, posters, block printing, textiles and painted boxes; the Handicraft School, of Washington, by bookbinding, metal work and jewelry, wood carving and gesso, freehand batik and tied and dyed work, baskets and hand weaving; the School of Fine Arts, Crafts and Decorative Design, of Boston, by designs for tapestries, and museum studies and designs showing museum influence; the Chicago School of Applied and Normal Art, by designs and cloth prints; and the New York School of Applied Design for Women, by historic ornament. Belonging in this class, but installed in the central hall, was a display of textiles and stenciled fabrics from the Philadelphia Textile School.

Room 46 was occupied by a variety of exhibits. Printing was represented in the form of booklets, cards, circulars, catalogues, folders,

labels, wrappers, stationery, menus and dull-finished printing, mounted on 37 wood panels, assembled and lent by the American Institute of Graphic Arts, of New York. Examples of wrought-iron work in locks, hinges, latches, knockers, etc., as well as designs, were shown by Samuel Yellin, of Philadelphia; and two fine specimens of wood carving, an oak figure and large panel, were contributed by I. Kirchmayer, of East Cambridge, Mass. Of stained glass there were two panels, one by Charles J. Connick, of Boston, for which he received a medal at the recent Panama-Pacific Exposition; the other, together with a number of designs, received from The Willet Stained Glass & Decorating Co., of Chestnut Hill, Pa. There was also included willow furniture from the McHugh Willow Furniture Co., painted furniture from the Co-operative Mural Workshops, and several mirrors, from the Delft Sectile & Importing Co., all of New York.

Rooms 44 and 45 were fitted up, respectively, as a colonial or early American dining room, and a living room in the Adam style. Each contained a mantel and fireplace, one with a pair of andirons the other with an old cast-iron grate, and both with fender and fire tools, supplied by Arthur Todhunter, of New York. The furniture in both, lent by W. B. Moses & Sons, of Washington, was of mahogany and machine made, and represented the best output of several native factories; while the windows in the dining room were hung with scrim curtains provided by the same firm, and in the living room with stenciled and embroidered curtains by Miss Lydia Bush-Brown, of Washington. The dining room contained a three-fold woven fire screen by Katherine Penn Crawford, of Warrenton, Va.; and upon the walls in both were colored drawings and photographs of designs for interior decoration, furnished by the William M. French Co., of Minneapolis, Minn., and Miss Gheen, of New York. In the living room a secretary and bookcase were filled with books, and there were some very admirable examples of handbound volumes and leather work by Miss Marian Lane, of Washington, and Miss Elsie Ingle, of Baltimore. Besides the above, lamps, clocks and other small objects, necessary complements to the furnishing of such rooms, were also made use of in completing their appointments, the entire arrangement of which was most satisfying to the best artistic sense.

Awards, in two classes, for work of distinguished merit among the exhibits were announced by the Federation as follows: Special honors to Frank Gardner Hale for his group of jewelry, Prof. Charles F. Binns for a group of vases, Samuel Yellin for work in wrought iron, I. Kirchmayer for wood carving, and Miss Marian Lane for bookbinding. Honorable mention to Miss Grace Hazen for a necklace of gold and opal, Herbert Kelly for a necklace of gold and tourmalines, the Marblehead Potteries for pottery and tiles, and the Pewabic Pottery for a group of vases and tiles. Special commendation was also made of exhibits by the Fulper and Newcomb potteries.

INDUSTRIAL WORK BY THE CHILDREN OF THE PLAYGROUNDS.

The annual exhibition of the industrial work of the children of the Washington playgrounds was held during October and November, 1915, in one of the textile halls in the older Museum building. It consisted of an attractive collection of kindergarten work, reed and raffia basketry, crocheting, knitting, plain sewing, embroidery, and tatting.

Industrial work is offered the children on the playgrounds, at their request, as a diversion when tired of playing ball, tennis, or other games, those preferring to make baskets, for instance, being supplied with the raffia, reed, needles, etc., and taught their use, other subjects being treated in the same way. These occupations are provided simply as a part of the amusement of the day, and the children who become interested in creating something with their hands are encouraged to complete whatever they have begun so that they may take it home to show their parents and keep as their own.

During the three summer months of 1915, 1,257 boys and girls between the ages of 3 and 17 were given instruction in this industrial work, meeting once a day on the several playgrounds. The entire expenditure for supplies was $265.50, making the cost per child about 21 cents. In the latter part of September each playground held an exhibition of its individual work, and from each of these the best pieces were selected for the joint display at the Museum. Eleven of the city's 12 playgrounds, 3 of them colored, were represented at the latter, as was also the single playground of Alexandria, Va., which is managed by a group of public-spirited women of that place. A great deal of the work had been done by very small children, and many found a ready sale for articles they had made. The showing in basketry by both boys and girls was especially creditable, several of the designs being entirely original.

The industrial feature of the playground movement, so well illustrated in the Museum exhibition, has proved exceedingly popular. That it serves a useful purpose in teaching the child to turn his hands to things of real value, while giving congenial employment, is beyond question. The exhibition was in charge of Miss Ella Gardner, director of girls' activities.

MISCELLANEOUS.

VISITORS.

The attendance of visitors at the new building for the year aggregated 316,707 for week days and 64,521 for Sundays, being a daily average of 1,012 for the former and of 1,240 for the latter. For the older Museum building, which is only open on week days, the total

was 146,956 and the daily average, 469. The halls in the Smithsonian building, which were closed for renovation during more than four months, had 48,517 visitors. The attendance in the new building was especially large during the week of the Grand Army Encampment, September 27 to October 2, and again during the "Safety first" exhibition, February 21 to 27.

The following tables show, respectively, the attendance of visitors during each month of the past year, and for each year since 1881, when the older Museum building was first opened to the public:

Number of visitors during the year ending June 30, 1916.

Year and month.	Older Museum Building.	New Museum Building.	Smithsonian Building.	Year and month.	Older Museum Building.	New Museum Building.	Smithsonian Building.
1915.				1916.			
July	11,324	22,941	3,186	January	6,240	18,810	3,911
August	16,568	30,591	(1)	February	8,474	30,144	4,583
September	21,265	41,497	(1)	March	7,974	25,735	6,017
October	15,738	33,582	(1)	April	16,949	43,352	10,854
November	10,115	25,926	(1)	May	11,497	35,292	7,326
December	7,385	22,722	5,067	June	13,227	30,636	7,573
				Total	146,956	381,228	48,517

[1] The exhibition halls in the Smithsonian building were closed to visitors from July 20, 1915, until Dec. 1, 1915, on account of the repairs in progress in the main hall of that building.

Number of visitors to the Museum and Smithsonian Buildings since 1881.

Year.	Older Museum Building.	New Museum Building.	Smithsonian Building.	Year.	Older Museum Building.	New Museum Building.	Smithsonian Building.
1881	150,000	.....	100,000	1899-1900	225,440	.....	133,147
1882	167,455	.....	152,744	1900-1	216,556	.....	151,563
1883	202,188	.....	104,823	1901-2	173,888	.....	144,107
1884 (half year)	97,661	.....	45,565	1902-3	315,307	.....	181,174
1884-85 (fiscal year)	205,026	.....	105,993	1903-4	220,778	.....	143,988
1885-86	174,225	.....	88,960	1904-5	235,921	.....	149,380
1886-87	216,562	.....	98,552	1905-6	210,886	.....	149,661
1887-88	249,665	.....	102,863	1906-7	210,107	.....	153,591
1888-89	374,843	.....	149,618	1907-8	299,659	.....	237,182
1889-90	274,324	.....	120,894	1908-9	245,187	.....	198,054
1890-91	286,426	.....	111,669	1909-10	228,804	50,403	179,163
1891-92	269,825	.....	114,817	1910-11	207,010	151,112	167,085
1892-93	319,930	.....	174,188	1911-12	172,182	281,887	143,134
1893-94	195,748	.....	103,910	1912-13	173,858	319,806	142,420
1894-95	201,744	.....	105,658	1913-14	146,533	329,381	102,645
1895-96	180,505	.....	103,650	1914-15	133,202	321,712	40,324
1896-97	229,606	.....	115,709	1915-16	146,956	381,228	48,517
1897-98	177,254	.....	99,273				
1898-99	192,471	.....	116,912	Total	7,727,732	1,835,529	4,580,933

BEQUESTS.

The Museum has had as loans for many years two very important collections belonging to Dr. Charles Upham Shepard, of Summerville, S. C., chemist and mineralogist, widely known for his preeminent part in the development of the phosphate industry in South Carolina, and for his successful experiments and practical results in tea culture at "Pinehurst," his Summerville home. One of these collections comprises about 5,000 specimens of minerals, which had been assembled by the distinguished father of Dr. Shepard, of the same name. The other is an exceedingly valuable series of meteorites, very rich in type and described material. Begun by the elder Shepard, it was extended by the son, and now includes examples of 234 falls and finds, several of which are unique or of exceptional rarity.

Dr. Shepard passed away on July 4, 1915, and in his will, admitted to probate on the 10th of the same month, was found a gratifying expression of his interest and his faith in the future of the National Museum, which is designated as the appropriate place for the permanent preservation of these collections. Although the execution of this document was not accomplished until after the close of the fiscal year, it is possible here to say that the meteorites have been definitely transferred to the Museum, while the minerals continue on deposit. The two articles of the will comprehending these bequests are as follows:

18. Should the assets of my estate be sufficient to pay all of the legacies specified in this my last Will and Testament, and conditionally upon such event, I give and bequeath to the United States National Museum at Washington, District of Columbia, U. S. A., my collection of meteorites now deposited in said institution as a Memorial of the labors of my father, Charles Upham Shepard, with request the said collection be hereafter preserved therein intact; and I also give to the said United States National Museum at Washington, District of Columbia, my father's correspondence and books pertaining to meteorites heretofore loaned to it.

19. I give to my Executors hereinafter named my collection of minerals together with the cases which contain them, together with the bound catalogue made by my father, and also all of my unset gems now loaned to the United States National Museum in Washington, District of Columbia, U. S. A. for the purpose of being given to that one of my nephews the sons of Louis Shepard DeForest or Edith James Wallach who shall first in the judgment of said Executors, develop a taste for mineralogy sufficiently attested by study and practice therein, otherwise the aforesaid collection of minerals together with the specific property mentioned in this paragraph to be retained by the aforesaid United States Museum at Washington.

In the report for 1914 announcement was made of two bequests by the late Dr. Leander Trowbridge Chamberlain in the sums of $25,000 and $10,000, respectively, to be known as the Frances Lea Chamberlain funds, the income of the former to be used for promoting the increase and the scientific value and usefulness of the Isaac Lea collection of gems and gem materials, and of the latter, for promoting the scientific value and usefulness of the Isaac Lea collection of

mollusks. There has been a delay in the settlement of the amounts so devised, but during last year $10,000 was received from the executor on account.

PUBLICATIONS.

Eight volumes and 52 separate papers were issued during the year. The volumes consisted of the annual report of the Museum for 1915, volumes 48 and 49 of the Proceedings, and the following Bulletins: No. 50, Part VII, "The birds of North and Middle America," by Robert Ridgway, containing descriptions of the cuckoos, parrots and pigeons; No. 91, "Report on the Turton collection of South African marine mollusks, with additional notes on other South African shells contained in the United States National Museum," by Paul Bartsch; No. 92, "Bibliographic index of American Ordovician and Silurian fossils," in 2 volumes, by Ray S. Bassler; and No. 94, "Handbook and descriptive catalogue of the meteorite collections in the United States National Museum," by George P. Merrill. Bulletin No. 70, entitled "The National Gallery of Art," by Richard Rathbun, issued in 1909, was reprinted in a small edition, with information and catalogues revised to January, 1916. Bulletins No. 39 (Part A), "Directions for collecting birds," and No. 67, "Directions for collecting and preserving insects," were also reprinted to enable the Museum to meet the constant demand for them. Of the 52 papers issued in separate form, 1 belonged to Volume 16, 3 to Volume 17 and 2 to Volume 18 of the series "Contributions from the U. S. National Herbarium," while 38 were from Volume 49 and 8 from Volume 50 of the Proceedings.

The distribution of volumes and separates to libraries and individuals on the regular mailing lists aggregated 61,638 copies, in addition to which some 12,160 copies of the publications of last and previous years were supplied in response to special applications.

Besides the Museum publications many contributions based on material in its collections were printed by other bureaus of the Government and by private institutions, all of which are cited in the bibliography. Those issued by the Smithsonian Institution were "Evidences of primitive life," by Charles D. Walcott, in the Report for 1915; Bulletin 62 of the Bureau of American Ethnology, entitled "Physical anthropology of the Lenape or Delawares, and of the eastern Indians in general," by Aleš Hrdlička; "Sources of nitrogen compounds in the United States," by Chester G. Gilbert; and the following which appeared in the Miscellaneous Collections: "A phylogenetic study of the recent crinoids, with special reference to the question of specialization through the partial or complete suppression of structural characters," by Austin H. Clark; "The jaw of the Piltdown man," by Gerrit S. Miller, jr.; "Descriptions of seven

new subspecies and one new species of African birds (plantain-eater, courser and rail)," by Edgar A. Mearns; "Descriptions of a new genus and eight new species and subspecies of African mammals," by N. Hollister; "Three new African shrews of the genus Crocidura," by N. Hollister; and "Explorations and field-work of the Smithsonian Institution in 1915."

The editorial office, besides supervising the printing of the Museum publications, also has charge of all miscellaneous printing and binding.

LIBRARY.

The library received 1,895 volumes, 2,873 pamphlets and 72 parts of volumes, and at the close of the year comprised 47,713 volumes and 79,241 pamphlets and unbound papers.

Besides the acquisitions by purchase and exchange, there were many important gifts. The entire scientific library of the late Dr. Theodore N. Gill was presented to the Smithsonian Institution by his brother and administrator, Mr. Herbert A. Gill, with the understanding that such works as pertain to museum subjects should be assigned to the Museum. The collection, which is extensive, has been only partly gone over, but it appears that the Museum's share will add many titles in natural history, especially ichthyology. Only a small portion of this contribution is included in the above enumeration. A number of publications were also received from the estate of the late Dr. C. A. Peale. The noteworthy sectional library on mollusks, which has been mainly built up through his efforts and generosity, was again indebted to Dr. William H. Dall to the extent of 207 titles. Other contributors, members of the staff or collaborators of the Museum, were Dr. E. A. Mearns, Dr. Charles D. Walcott, Dr. Walter Hough, Mr. William R. Maxon, Dr. O. P. Hay, Dr. F. A. McDermott and Dr. F. P. Dewey.

EXPOSITIONS.

The exhibits installed by the National Museum at the Panama-Pacific International Exposition at San Francisco which opened on February 20, 1915, as described in the last report, continued to attract much attention and to be the subject of favorable comment during the entire period of the exposition, which closed on December 4. The packing of the material for reshipment to Washington had been well advanced when Congress, by joint resolution, directed that the Government exhibit, or such parts of it as the President might deem advisable, "be transferred to the Panama-California International Exposition during its continuance at San Diego, Cal., until not later than December 31, 1916." As only 4,000 square feet of floor space, in the Science and Education Building, were available for the Smithsonian Institution at San Diego, but a part of the ex-

hibit at San Francisco could be accommodated, and a selection was made of ethnological material from the Museum collection, all of the other exhibits under the Institution being returned to Washington, mainly in a naval collier, but partly by railroad.

The ethnological installation made at San Diego embraced the four large family groups mentioned in the report for 1915, representing, respectively, the western or Alaskan Eskimo, the Zulu-Kaffirs of the semi-arid southern extremity of Africa, the Caribs of the interior of British Guiana, and the Dyaks who live along the rivers of the interior of the Island of Borneo, besides dwelling groups in miniature illustrating the architecture and village life of many widely separated Indian tribes and other aboriginal peoples of the world, and four cases of specimens representing their arts, industries, etc. In addition, a set of framed lithographs of Catlin's North American Indian paintings, including portraits, scenes, dances, etc., executed in the fourth decade of the last century, were used for decorating the walls. The arrangements at San Diego, as at San Francisco, were directed by Mr. W. de C. Ravenel, the representative of the Smithsonian Institution, the installation being made by Dr. Walter Hough, curator of ethnology in the Museum, assisted by Mr. W. H. Egberts and Mr. F. H. Cole. These were completed in February, 1916, and the exhibits immediately opened to the public.

ORGANIZATION AND STAFF.

There were few changes during the year in connection with the scientific staff. Mr. Carl W. Mitman was appointed assistant curator in the division of mineral technology on July 16, 1915; Mr. Charles E. Resser, assistant curator, and Mr. Herbert D. Chabot, aid, in the division of paleontology on October 16, 1915; Mr. Harry R. Rosen, aid in the division of plants on October 1, 1915, and Miss Pearl L. Boone, aid in the division of marine invertebrates on February 1, 1916. The following were temporarily employed, namely, Mr. Philip Dowell as an assistant curator of plants for two months from July 1, 1915; Miss Mary F. Miller as assistant botanist for the same length of time from the middle of April, 1916; and Mr. Isaac Ginsburg as aid in the division of fishes for an indefinite period from May 1, 1916. Dr. P. E. Garrison, U. S. Navy, who had been serving for several years as an assistant custodian in the section of helminthological collections, having been detached from duty in Washington, severed his connection with the Museum from July 1, 1915.

By the death on November 10, 1915, of Dr. Edward Lee Greene, the Museum lost one of the most learned and distinguished members of its staff, and a gap was created in the ranks of American botanists, which, it has been said, can never be filled. Dr. Greene was born in Hopkinton, R. I., August 20, 1843. After serving in the

Civil War, he entered Albion College, Wisconsin, from which he was graduated as bachelor of philosophy in 1866. The degree of doctor of laws was conferred upon him by Notre Dame in 1895. Dr. Greene was instructor in botany and German at Albion College from 1866 to 1868, and taught botany at Jarvis Hall, Golden City, Colo., in 1871 and 1872. He became connected with the University of California, first as lecturer in botany in 1882, then as instructor and finally, in 1890, as full professor. He resigned this position in 1895 to accept the professorship of botany in the Catholic University of America at Washington, D. C., which he held until 1904. In this year he was designated an associate in botany in the National Museum, and subsequently he gave much of his time to the writing of "The landmarks of botanical history," of which the first part has been published by the Smithsonian Institution. Work on the second part was in progress at the time of his death.

THE MUSEUM STAFF.

[June 30, 1916.]

CHARLES D. WALCOTT, Secretary of the Smithsonian Institution, Keeper *ex officio*.
RICHARD RATHBUN, Assistant Secretary, in charge of the United States National Museum.
W. DE C. RAVENEL, Administrative Assistant.

SCIENTIFIC STAFF.

DEPARTMENT OF ANTHROPOLOGY:
William H. Holmes, Head Curator.
Division of Ethnology: Walter Hough, Curator; Neil M. Judd, Aid; J. W. Fewkes, Collaborator; Arthur P. Rice, Collaborator.
Division of American Archeology: William H. Holmes, Curator; E. P. Upham, Aid; J. D. McGuire, Collaborator.
Division of Old World Archeology: I. M. Casanowicz, Assistant Curator.
Division of Physical Anthropology: Aleš Hrdlička, Curator; R. D. Moore, Aid.
Division of Mechanical Technology: George C. Maynard, Curator.
Division of Graphic Arts: Paul Brockett, Custodian; Ruel P. Tolman, Aid.
Section of Photography: T. W. Smillie, Custodian.
Division of History: A. Howard Clark, Honorary Curator; T. T. Belote, Assistant Curator.
Associates in Historic Archeology: Paul Haupt, Cyrus Adler.
DEPARTMENT OF BIOLOGY:
Leonhard Stejneger, Head Curator; James E. Benedict, Chief of Exhibits.
Division of Mammals: Gerrit S. Miller, jr., Curator; Ned Hollister, Assistant Curator.
Division of Birds: Robert Ridgway, Curator; Charles W. Richmond, Assistant Curator; J. H. Riley, Aid.
Division of Reptiles and Batrachians: Leonhard Stejneger, Curator; R. G. Paine, Aid.
Division of Fishes: Barton A. Bean, Assistant Curator.
Division of Insects: L. O. Howard, Honorary Curator; J. C. Crawford, Associate Curator.
Section of Hymenoptera: J. C. Crawford, in charge.
Section of Myriapoda: O. F. Cook, Custodian.
Section of Diptera: Frederick Knab, Custodian.
Section of Muscoid Diptera: C. H. T. Townsend, Custodian.
Section of Coleoptera: E. A. Schwarz, Custodian.
Section of Lepidoptera: Harrison G. Dyar, Custodian.
Section of Orthoptera: A. N. Caudell, Custodian.
Section of Hemiptera: Otto Heidemann, Custodian.
Section of Forest Tree Beetles: A. D. Hopkins, Custodian.
Division of Marine Invertebrates: Paul Bartsch, Curator; William H. Dall, Honorary Curator of Mollusks; Waldo L. Schmitt, Assistant Curator; Austin H. Clark, Assistant Curator; William B. Marshall, Assistant Curator; C. R. Shoemaker, Aid; Miss Pearl L. Boone, Aid; H. K. Harring, Custodian of the Rotatoria; Harriet Richardson Searle, Collaborator; Mary Breen, Collaborator.
Section of Helminthological Collections: C. W. Stiles, Custodian; B. H. Ransom, Assistant Custodian.

DEPARTMENT OF BIOLOGY—Continued.

Division of Plants (*National Herbarium*): Frederick V. Coville, Honorary Curator; W. R. Maxon, Associate Curator; P. C. Standley, Assistant Curator; Harry R. Rosen, Aid.

Cactaceæ, Crassulaceæ, and Miscellaneous Mexican Collections: J. N. Rose, Custodian.

Section of Grasses: Albert S. Hitchcock, Custodian.

Section of Cryptogamic Collections: O. F. Cook, Assistant Curator.

Section of Higher Algæ: W. T. Swingle, Custodian.

Section of Lower Fungi: D. G. Fairchild, Custodian.

Section of Diatoms: Albert Mann, Custodian.

Associates in Zoology: C. Hart Merriam, W. L. Abbott, Edgar A. Mearns, United States Army (retired), Mary J. Rathbun.

Associates in Botany: John Donnell Smith, J. N. Rose.

DEPARTMENT OF GEOLOGY:

George P. Merrill, Head Curator.

Division of Physical and Chemical Geology (Systematic and Applied): George P. Merrill, Curator; James C. Martin, Assistant Curator.

Division of Mineralogy and Petrology: F. W. Clarke, Honorary Curator; Edgar T. Wherry, Assistant Curator; Douglas B. Sterrett, Custodian of Gems and Precious Stones.

Division of Paleontology: R. S. Bassler, Curator; Charles E. Resser, Assistant Curator.

Section of Invertebrate Paleontology: T. W. Stanton, Custodian of Mesozoic Collection; William H. Dall, Associate Curator of Cenozoic Collection; T. Wayland Vaughan, Custodian of Madreporarian Corals.

Section of Vertebrate Paleontology: James W. Gidley, Assistant Curator of Fossil Mammals; Charles W. Gilmore, Assistant Curator of Fossil Reptiles.

Section of Paleobotany: David White, Associate Curator; F. H. Knowlton, Custodian of Mesozoic Plants; Herbert D. Chabot, Aid.

Associates in Paleontology: Frank Springer, E. O. Ulrich.

DIVISION OF TEXTILES:

Frederick L. Lewton, Curator.

Section of Wood Technology: George de S. Canavarro, Assistant Curator.

DIVISION OF MINERAL TECHNOLOGY:

Chester G. Gilbert, Curator; C. W. Mitman, Assistant Curator.

NATIONAL GALLERY OF ART:

William H. Holmes, Curator.

ADMINISTRATIVE STAFF.

Chief of Correspondence and Documents, R. I. Geare.

Disbursing Agent, W. I. Adams.

Superintendent of Buildings and Labor, J. S. Goldsmith.

Editor, Marcus Benjamin.

Editorial Clerk, E. S. Steele.

Assistant Librarian, N. P. Scudder.

Photographer, T. W. Smillie.

Registrar, S. C. Brown.

Property Clerk, W. A. Knowles.

Engineer, C. R. Denmark.

LIST OF ACCESSIONS TO THE COLLECTIONS DURING THE FISCAL YEAR 1915–1916.

[Except when otherwise indicated, the specimens were presented, or were transferred by bureaus of the Government in accordance with law.]

ABBOTT, DR. WILLIAM L.: 34 ethnological specimens, 465 mammals, 869 birds, 50 reptiles, a starfish, mollusk and eel, and a specimen of copper-lead ore, collected by Mr. H. C. Raven in Celebes and Borneo (58619); 3 birds and 3 small mammals from Norway, and a small mammal from England (58624); 183 mammals, 2 birds and a sack of tree seeds (59435). (See under Kloss, C. Boden.)

ACADEMY OF NATURAL SCIENCES, Philadelphia, Pa. (through Mr. Clarence B. Moore): Collection of miscellaneous bones, principally of mammals (58622).

ADAMS, WARREN P., Newtown, Pa.: Specimen of a plant, *Cuphea*, from Pennsylvania (59046).

AGRICULTURE, DEPARTMENT OF:

Bureau of Biological Survey: 168 specimens of plants from Arizona and Nevada, collected by Mr. E. A. Goldman (58542, 59352, 59800, 59906); 4 prairie dogs, consisting of 2 specimens of *Cynomys gunnisoni* and 2 of *C. ludovicianus* (58547, 58552); about 115 mollusks from British Columbia and Oregon, collected by Mr. E. A. Preble (58598, 58857), 5 fishes, a dried head of a fish, 2 crustaceans and 2 scorpions, collected by Mr. Preble in Oregon (58926, 58984); about 750 Diptera, including paratypes of *Culicoides hieroglyphica*, *Tanypus illinoiensis*, *Chironomus dimorphus* and *C. fusicornis* (58687); 4 black-spotted trout, *Salmo pleuriticus*, collected by Mr. E. G. Holt in Nye County, Nev. (58702); turtle, *Chrysemys bellii*, collected by Mr. Remington Kellogg at Grinnell, N. Dak. (58777); 349 specimens of plants collected in

AGRICULTURE, DEPARTMENT OF—Contd.

South Carolina, Kentucky, and Tennessee by Mr. C. P. Alexander (58972); fossil turtle collected by Mr. H. H. Sheldon 15 miles south of Imlay, S. Dak. (59084); skin and skull of tayra, *Galictis*, from Peru (59133); 24 specimens of plants collected in Wyoming by Mr. Vernon Bailey (59174); 316 specimens of plants from Alabama, Maine, and Massachusetts (59223, 59246); 8,110 North American mammals, 5,986 of which are alcoholic, collected by the Survey (59284, 59920); 309 fishes collected in Mexico and other localities, an axolotl from Mexico and a snail from British Columbia (59367); 385 specimens of plants collected in Nebraska by Mr. Ray Thomson (59441); types of insects, *Cicada cultriformis*, *Diaphorus nudus*, *Botanobia insularis*, *B. proxima*, *Culicoides hieroglyphica* and *Chironomus utahensis* (59483); 7 amphipods, consisting of 4 specimens of *Gammarus locusta* from Matinicus Island, Me., and 3 of *Hyalella azteca* from South Cody Lake, Nebr. (59527); 178 reptiles and batrachians from various localities (59921).

Bureau of Entomology: 3 turtles, *Gopherus polyphemus*, from Mississippi, collected by Mr. D. L. Van Dine (58558); 230 Miocene insects from Florissant, Colo. (58956); 6 earthworms collected at Bethesda, Md. (59076); about 375 Diptera and 20 miscellaneous insects, collected by Mr. August Busck in the Hawaiian Islands, and 5,000 Lepidoptera (59485); 25 insects collected by Mr. F. N. Meyer in Mokanshan, China,

AGRICULTURE, DEPARTMENT OF—Contd.
and a small collection made by him at Nanking, China (59490); larvæ, eggs and pupæ of ground beetles, *Calosoma*, bred at the Gypsy Moth Laboratory, Melrose Highlands, Mass. (59501); about 100 bees from Cranmoore, Wis. (59561); 13 specimens of plants from Georgia and Florida (59766); 2 earthworms, *Helodrilus chloroticus*, from Washington, D. C. (59778); 7 specimens of plants from Oklahoma (59839).

Forest Service: 2 rocks showing boring of pholad mollusks on the California coast, collected by Mr. Carl A. Kupfer (58770); sections of long-leaf pine trunks illustrating the box, cup and gutter, and Forest Service methods of turpentining, samples of gum, scrape and rosin, and examples of the tools used in obtaining turpentine, received through Mr. Inman F. Eldredge, supervisor, Florida National Forest (59881, collected for the Museum).

Bureau of Plant Industry: 5 specimens of plants from Santa Lucia (58565), 400 from California, collected by Mr. G. N. Collins and Mr. J. H. Kempton (58635, 59300), 33 from Illinois (58647); 2,983 mounted specimens of grasses (58648, 59617, 59698); 95 specimens of plants from Arizona, collected by Dr. David Griffiths (58659, 59895); photostat copy of a manuscript on a tropical mistletoe, *Loranthus* sp., by Fácita Molina, together with specimens of *Loranthus* and "flores de palo" (58669); specimen of an alga, *Hormiscia tetraciliata*, from Washington (58772); 35 specimens of plants from Wisconsin (58805), 6 from New Jersey (58858, 59108); specimen of a climbing fern, *Lygodium*, from the Philippines (58991); 3 specimens of plants from China (58999, 59175); specimen of a fungus, *Thelephora*, from New York (59089); 62 photostat prints of plants, chiefly of the genus *Inga* (59093, 59113); 26 specimens of rushes, *Juncus*, mainly from the western United States (59187, 59232, 59359, 59377); 35 specimens of plants collected in China and Japan by Mr. F. N. Meyer (59220, 59562); specimen of *Verbesina* from Venezuela (59233); 54 specimens of plants collected in Montana, Utah, and Washington by Mr. E. O. Wooton (59244, 59358), 3 from Utah (59260), 552 chiefly from California and Arizona, collected by Prof. A. S. Hitchcock (59296); specimen of a sedge, *Carex*, from Brazil (59309), 1 of a gooseberry, *Grossularia*, from Wyoming (59332); 20 specimens of plants collected in Canada by Mr. Frederick V. Coville (59337), 2 from the District of Columbia (59372, 59509); 4 photographs of Brazilian plants, Cyperaceæ (59413); 82 specimens of plants from North Dakota, collected by Mr. J. T. Sarvis (59598); small specimen each of the wood, fruit and fibre of the kapok or silk cotton tree, *Ceiba pentandra*, from Tahiti (59671); 1,078 specimens of plants from the United States, mainly from the western part, collected by Mr. W. W. Eggleston (59797, 59872); specimen of an orchid, *Stenorhynchus*, from Florida (59807); specimen of a plant, *Selaginella*, from North Carolina, collected by Mrs. Agnes Chase (59884); specimen of a currant, *Ribes*, from Arizona (59896).

AGRICULTURE, DEPARTMENT OF—Contd.

AILES, M. E., Washington, D. C.: Specimen of a bunch-berry, *Cornus canadensis*, from West Virginia (58668).

ALBERTA, UNIVERSITY OF, Edmonton South, Alberta, Canada: 18 specimens representing a suite of the alkaline igneous rocks from the Ice River District, British Columbia (59635, exchange).

ALDRICH, J. M., Lafayette, Ind.: 7 insects, *Psilopus*, of which 2 are cotypes of *P. flavipes* (58689).

ALFORD, W. M., & SONS, New York City: Sample of yarn-dyed novelty silk, "puppy skin" (58834).

ALLAN, JAMES, Vienna, Va.: 300 specimens of plants collected in Argentina by Mr. Walter Fischer (59027, purchase).

ALLARD, H. A., U. S. Department of Agriculture, Washington, D. C.: 8 toads from Virginia (59692).

ALLEN, FREDERICK I., New York City (through Prof. F. W. Clarke): Specimen of leucophoenicite from Franklin Furnace, N. J. (59067).

AMERICAN BANK NOTE CO., New York City: A copy each of the Lord's Prayer and the Ten Commandments, engraved by Mr. C. Toppan under a microscope (58660).

AMERICAN ENTOMOLOGICAL SOCIETY, Philadelphia, Pa.: Ichneumon fly, *Pseudorhyssa sternata* (58733, exchange).

AMERICAN MUSEUM OF NATURAL HISTORY, New York City: Cast of the type of the fossil horse, *Merychippus sejunctus*, consisting of a skull and lower jaw (58604, exchange); cast of a porpoise, *Tursio borealis* (58793); sample of stomach contents taken from the alimentary canal of a basking shark (59115). (See under Beers, Nathan Perry.)

AMERICAN MUSEUM OF SAFETY, THE, New York City (through Dr. William H. Tolman, director): 4 bronze replicas of the Anthony N. Brady memorial medal, awarded annually by The American Museum of Safety to the American electric railway company which for the year of the award has done most to conserve the safety and health of the public and of its employees (59679).

AMERICAN PEACE CENTENARY COMMITTEE, 1914-1915, New York City: 2 bronze replicas of the medal issued by the American Peace Centenary Committee commemorating, 1915, the one hundredth anniversary of peace among English-speaking peoples (59955, purchase).

AMERICAN TELEPHONE & TELEGRAPH Co., New York City: Materials and apparatus used on the transcontinental telephone line on the occasion of the first telephonic conversation between New York and San Francisco, January 25, 1915 (59127, 59334); duplicate of the first telephone transmitter, A. G. Bell, 1875 (59455).

AMERICAN TEXTILOSE Co., New York City: 6 spools of "Zylolin" yarn made from wood fibre, and 9 samples of rugs showing the finished product woven from this yarn (59777).

AMERICAN THREAD Co., THE, New York City: A series of specimens, models and sections of machines illustrating the manufacture of cotton thread (59306);

AMERICAN THREAD Co., THE—Contd. 34 photographs covering the various processes in thread making, from cotton in bales to the finished goods (59540).

AMERICAN TYPE FOUNDERS Co., Jersey City, N. J. (through Mr. Henry L. Bullen): A Wells hand press, model of 1816, and 2 photographic views of the press (59294); collection of type and type-casting material, 199 specimens (59932).

AMORY, COPLEY, jr.: About 365 mammals, 243 birds, 5 nests, 30 eggs, 242 fishes, 61 specimens of plants and a number of insects, from Siberia, and a few birds from Kodiak Island (59079).

AMSTUTZ, N. S., Valparaiso, Ind.: Cutter sharpener, used in connection with akrograph engraving machine (59927, loan); collection of machines and machinery and other specimens, used by the inventor and donor in developing his method of sending photographs by telegraph and the development from this of the akrograph engraving machine (59928).

ANDERSEN, OLAF, Geophysical Laboratory, Washington, D. C.: Specimens of aventurine feldspar, described by the donor (58811).

ANDREWS, Mrs. GEORGE L., Washington, D. C.: Oil painting by George Inness, entitled "Elf Ground" (59803); collection of laces and fans, a black lace parasol and 3 pieces of silver (59804). Loan. (See under Rantoul, Robert S.)

ANDREWS, Mrs. MARIETTA M., Theological Seminary, Va.: Studio properties of the late Eliphalet Fraser Andrews (Düsseldorf and Washington), presented as a memorial by Mrs. Andrews (59821).

APOLLINAIRE-MARIE, Brother, Bogotá, Colombia: 40 specimens of ferns from Colombia (59516).

AREQUIPA POTTERY STUDIO, Fairfax, Cal.: 7 specimens of Arequipa pottery (59624, purchase).

ARGENTINA, COMISION DE LA EXPOSICION UNIVERSAL, 1915, San Francisco, Cal.: 16 specimens of Argentine woods, received through Mr. Enrique M. Nelson, vice-commissioner general (59648); 3 carved panels of native woods, cedro

ARGENTINA, COMISION DE LA EXPOSICION UNIVERSAL, 1915—Continued.
macho, loro negro and loro blanco de misiones, received through Mr. H. N. Curran, Laurel, Md. (59962).

ARNOLD ARBORETUM, Jamaica Plain, Mass. (See under Harvard University.)

ARSÈNE, Brother G., Calvert Hall College, Baltimore, Md.: 2 specimens of plants from Mexico (59854).

ARTHUR, A. C., Cristobal, Canal Zone: Insect, *Dysodius lunatus* (58634).

ARTHUR, Dr. J. C., Purdue University, Lafayette, Ind.: 32 specimens of rusts, including part of the type of *Calliospora petalostemonis*, from New Mexico (58677, 59317, 59390). (See under Purdue University.)

ASBESTOS CORPORATION OF CANADA, LTD., Montreal, Canada: Photograph of Kings Pits, Thetford Mines, Canada (59563).

ASCHEMEIER, C. R., U. S. National Museum: Bat, *Nycteris cinerea* (58995).

ASTORIA VENEER MILLS AND DOCK CO., Long Island City, N. Y.: Specimens of various mahoganies, American, English, and Circassian walnut, padouk, barri and sabicue, 20 pieces in all, varying in length from 6 to 8 feet (58633); 12 specimens of foreign woods in 6-foot planks (59842).

ATLANTIC REFINING CO., THE, Philadelphia, Pa.: Oil samples (59721).

ATLAS PORTLAND CEMENT CO., THE, New York City: 350-pound samples of cement rock and a 50-pound sample each of clinker and Portland cement (59897).

AUSTIN, JAMES B., Washington, D. C.: Small collection of ores from the San Juan District, Colo. (59157).

AUSTRALIAN COMMISSION, PANAMA-PACIFIC INTERNATIONAL EXPOSITION, 1915, San Francisco, Cal.: 28 specimens of Australian agricultural products and 5 photographs framed in Australian woods received through Mr. George Oughton, secretary (59646); collection of ores and minerals, received through Mr. Niel Nielsen, commissioner for New South Wales (59657).

AUSTRALIAN MUSEUM. (See under Sydney, New South Wales.)

AVERY, SAMUEL PUTNAM, MEDAL COMMITTEE (through Dr. George F. Kunz, chairman, New York City): Copy, in bronze, of the Samuel Putnam Avery medal (58550).

AYER, EDWARD E., Chicago, Ill.: 2 sets of postal cards illustrating anthropological, biological and geological exhibits in the Field Museum of Natural History, Chicago (59292).

BAIRD, Miss LUCY HUNTER (through Mr. Herbert A. Gill, executor, Washington, D. C.): Commission of Prof. Spencer F. Baird as Commissioner of Fish and Fisheries, dated February 25, 1871, signed by U. S. Grant, President, and Hamilton Fish, Secretary of State; and letter dated March 4, 1871, signed by J. C. B. Davis, Assistant Secretary of State, forwarding the above commission to Prof. Baird (58951, bequest).

BAKER, Dr. F. H., Richmond, Victoria, Australia: 40 insects (58752, exchange); small lot of insects (59548).

BAKER, Dr. FRED., Point Loma, Cal.: 2 boxes of butterflies, one of them from Japan (58697); 3 reptiles from Japan (59805).

BALL, C. R., Bureau of Plant Industry, Washington, D. C.: 61 specimens of willows from the western United States (59346).

BALL, SYDNEY H., New York City (through Dr. E. O. Ulrich, Washington, D. C.): 2 septarian concretions from Portuguese West Africa (58887).

BANGS, C., Atlanta, Ga.: Copper spearhead found in Wilkin County, Minn., a mile east of Red River (58654).

BANKS, H. K., Kirbyville, Tex.: English verge watch (59470, loan).

BARBER ASPHALT PAVING CO., THE, Philadelphia, Pa.: Series of objects and materials illustrating the asphalt industry (59963).

BARBER, A. W. (See under Ransom, Miss Irene, Estate of.)

BARBER, MANLY D., Knoxville, Tenn.: 16 specimens, 4 species, of fresh-water

BARBER, MANLY D.—Continued.
mollusks from Tennessee and the District of Columbia (58914, exchange); 155 specimens, 13 species, of mollusks collected from the Tennessee River, at Knoxville (59344); 300 specimens of Ordovician fossils from eastern Tennessee (59395, exchange).

BARLOW, BURT E., Coldwater, Mich.: 2 carpet bags used about 1870 (58639).

BARLOW, Miss CATHERINE BRITTIN, Washington, D. C.: Collection of Chinese objects, consisting of a string of perfumed beads in a round box, 3 wax balls containing pills, a medicine box containing wax balls, a lady's silk embroidered apron, and 3 rolls of silk floss (59303).

BARNETT, VICTOR H., Washington, D. C.: 14 bird skins and skin and skull of a wild boar, from China (58606, 58771).

BARRETT, CHARLES, Washington, D. C.: 7 specimens, representing 6 species, of land, fresh-water and marine shells, from Pilgrim Island, James Bay, Canada (58617).

BARTELS, J. M., Co., New York City: 78 miscellaneous foreign postage stamps (59199, purchase).

BARTON, R. T., Constellation, Ariz. (through U. S. Geological Survey, Washington, D. C.): Specimen of crocoite (59772).

BASSLER, Dr. R. S., U. S. National Museum: Collection of fossil bryozoans and ostracods, consisting of about 5,000 specimens (59037).

BASTIN, E. S., U. S. Geological Survey, Washington, D. C.: Specimen of native antimony from Kern County, Cal. (59384).

BATES, Mrs. CAROLINE E., Washington, D. C.: Crossbow (59619, loan); collection of anthropological, biological and textile material (59652).

BAXTER, M. S., Rochester, N. Y.: 54 specimens of goldenrods, *Solidago*, from New York (59531).

BEACH, REUEL, Cambridge, Mass.: 3 specimens of chalk overlay (59618).

BEAL, FRANK J., Commissioner, Department of Fisheries and Game, Plymouth, N. H.: Crayfish from the vicinity of Winnepesaukee Lake, N. H. (58850).

BEALS, Mrs. W. G., Lake Valley, N. Mex.: 109 specimens of plants from New Mexico (58569, 59799).

BEAM, WILLIAM B., Paterson, N. J.: Portrait in oil of an Indian girl, "Eagle of Delight," by Charles B. King (59301, loan).

BEAN, BARTON A., U. S. National Museum: Pompon, *Anisotremus surinamensis*, obtained in Center Market, Washington, and said to have been shipped from Florida (59366).

BEAN, JOHN and EDWIN, Washington, D. C.: Turtle from Maryland (58663).

BEAN, Dr. ROBERT BENNETT, Tulane University, New Orleans, La.: 14 anatomical specimens (59236, 59560, collected for the Museum).

BEAN, Dr. TARLETON H., Conservation Commission, Albany, N. Y.: Type specimen of a whitefish, *Leucichthys macropterus*, collected by Mr. Philip H. Hartman, superintendent of the State Hatchery, Erie, Pa. (59213).

BEERS, NATHAN PERRY (through James B. and Edward DeLuna, New York City, and the American Museum of Natural History): A rocking-chair owned by Henry Clay, and a silk banner with streamer of red, white and blue silk carried on the occasion of his funeral (59059).

BELL, Dr. ALEXANDER GRAHAM, Washington, D. C.: 27 documents, consisting of diplomas, certificates of membership and award, etc., of Dr. Bell (59270, loan).

BELLAMY, Mrs. ELLEN WASHINGTON, Macon, Ga.: 34 historical relics (59834, loan).

BEMENT, CLARENCE S., Philadelphia, Pa.: A specimen of hodgkinsonite from Franklin Furnace, N. J., and of betafite from Madagascar, received through Prof. F. W. Clarke (59357); 2 specimens of meteorites, Mt. Edith and Mungindi, Australia, and 2 minerals, eudialyte from Greenland and hopeite from South Africa (59751).

BENEDICT, Dr. J. E., U. S. National Museum: Snake, *Diadophis*, from Woodside, Md. (58763).

BENGE, ELMER, Folcroft, Pa.: Specimen of evansite from Mullica Hill, N. J. (59202).

BENJAMIN, Mrs. CAROLYN GILBERT, Washington, D. C.: Invitation to the wedding of Joseph L. Gilbert and Caroline Etchebery, at Saint Vincent de Paul Church, New York City (58916).

BENJAMIN, Dr. MARCUS, U. S. National Museum: Pair of baby slippers worn by the donor in San Francisco in 1857 (58554); 345 engraved and half-tone portraits of noted men (58976, loan); bronze token commemorating the Tennessee Centennial Exposition, Nashville, 1897 (59165); sheet of poster stamps—"Robert Treat directing landing of founders of Newark" (59609); 6 posters and 22 poster stamps (59858).

BENT, A. C., Taunton, Mass.: Skin of European sparrow hawk, *Accipiter nisus*, said to be from New York (59269).

BEST, A. C., Whitesburg, Ky.: Common stag-beetle, *Lucanus elaphus* (58751).

BIGELOW, Maj. JOHN, U. S. Army, Washington, D. C.: Objects pertaining to the costume worn by John Bigelow, father of the donor, at the Court of Napoleon III, when American Minister to France, 1865–1866, consisting of a chapeau, coat, pair of trousers, pair of knee breeches, 2 vests, and a sword and scabbard (59728).

BISETT, E. W., Bradford, Pa.: Specimen of oil-bearing rock from Bradford (59274).

BLAIR, Mrs. LYMAN, Greenville, Me.: Piece of pink-and-white silk embroidered with three floral designs, from a dress worn at one of the receptions given to Lafayette in this country, and a Lowestoft china cup and saucer used at the same reception (58989).

BLOCK, Mrs. CHARLES, Washington, D. C.: 8 Jewish prayer-books, in 12 volumes (58608).

BLUMENTHAL, SIDNEY, & Co., INC., New York City: 13 samples of drapery fabrics and furniture coverings, 4 corners of portieres and a fortuna silk plush portiere (58868); 4 samples of

BLUMENTHAL, SIDNEY, & Co.—Contd.
velvet upholstery and drapery fabrics, received through Mr. N. W. Doorly (59941).

BOARDMAN, Mrs. W. J., Washington, D. C.: Blue satin dress, with embroidered strawberry designs, worn by Miss Mabel T. Boardman (59900, loan).

BOCKMAN, A. E., New York City: 2 slabs of marble from the quarries of H. E. Gittins, Burlington, Vt. (59446).

BODELL, Mrs. P. T., Washington, D. C.: Chair made from wood obtained from the Confederate ironclad *Merrimac*, and a silk flag used by a Virginia whig association during the political campaign of 1840 (58717, loan).

BODKIN, GILBERT E., Science and Agriculture Department, Georgetown, British Guiana: 5 specimens of an arthropod, *Epiperipatus imthurmi*, collected in British Guiana (58746).

BOLIVIA, COMMISSION OF, PANAMA-PACIFIC INTERNATIONAL EXPOSITION, 1915, San Francisco, Cal. (through Dr. Otto Buchtien, commissioner): Collection of ore and mineral specimens (59658).

BOLLMAN, H. C., Smithsonian Institution: 2 specimens of a persimmon, *Diospyros*, from Maryland (58577). (See under Standley, Paul C.)

BONAPARTE, PRINCE ROLAND, HERBARIUM OF, Paris, France (through Mr. C. Belhatte): 4 photographs of ferns (59510, exchange).

BOONE, Miss PEARL L., U. S. National Museum: Specimen of orchid, *Blephariglottis*, from Maryland (58709).

BØVING, Dr. A. G. (See under Henriksen, Kaj L.; Kryger, J. P.; Lapouge, G. de; and Rosenberg, E.)

BRADSHAW, Mrs. J. H., Beaver, Utah: Obsidian blade and a fragmentary earthenware bowl, from Beaver Valley, Utah, collected by the donor (58744).

BRANDEGEE, Mrs. KATHARINE, University of California, Berkeley, Cal.: Specimen of a plant, *Arctomecon*, from Nevada (59234).

BRANSON, LLOYD, Knoxville, Tenn.: Cottontail rabbit from Knoxville (59695).

BREEDING, Mrs. T. M., Spray, Oreg.: Specimen of opal (59211).

BRETON, Miss ADELA C., Washington, D. C.: Water-color drawing of "Part of painting in vault of large upper chamber, Casa de las Monjas, Chichen-Itza," by A. Breton, 1902 (59784).

BRIMLEY, C. S., Raleigh, N. C.: 11 turtles from Florida (58712, purchase).

BRINKLEY, STERLING G., Soochow University, Soochow, China (through Carnegie Institution of Washington): 25 Carboniferous fossils from China (58754).

BRISTOW, J. Q., Accotink, Va.: Paper money, consisting of six notes issued by the Spanish Bank of Cuba (59168).

BROADWAY, W. E., Port-of-Spain, Trinidad: 4 specimens of plants from Trinidad (59810, 59891); specimen of a plant from Venezuela (59451).

BROWN, BENJAMIN, U. S. National Museum: An Elliot 4-barrel pistol (59100).

BROWN, E. J., Los Angeles, Cal.: Reptiles, batrachians, mammals and crustaceans from California (59257); 260 bird skins from southern California (59405).

BROWN, SAMUEL K., Los Angeles, Cal.: 5 skins of the valley quail, *Lophortyx californica vallicola*, from southern California (59406).

BRUCH, Dr. CARLOS, La Plata, Argentina: Specimen of a plant, *Prosopanche burmeisteri*, from Alto Pencoso, Province of San Luis, Argentina (58908).

BRUNSWICK-BALKE-COLLENDER CO., THE, New York City: 8 specimens showing the manufacture of bowling balls and tenpins (59817).

BRYANT, H. C., University of California, Berkeley, Cal.: Skin of Temminck's robin, *Icoturus komadori* (59044).

BRYANT, WALLACE, Boston, Mass.: 36 oil paintings by Wallace Bryant (59952, loan).

BUCHANAN, Mrs. ROBERDEAU, Washington, D. C.: White linen handkerchief with colored cross-stitch designs, sampler made prior to 1811 and one made in 1811, work of members of the Roberdeau family (59287, loan).

BUCHTIEN, Dr. OTTO. (See under Bolivia, Commission of, Panama-Pacific International Exposition.)

BUCKINGHAM, Mrs. EDGAR, Chevy Chase, Md.: About 5,000 invertebrate fossils, and a miscellaneous collection of stone objects from New Jersey, Pennsylvania, Texas and other localities (59162).

BUENOS AIRES, ARGENTINA, MUSEO NACIONAL: Specimen of wood infested with the isopod *Limnoria lignorum*, these being the first examples of this species recorded from South America (59949).

BUFFALO SOCIETY OF NATURAL SCIENCES, Buffalo, N. Y.: 16 specimens of fossil fish remains (59135, exchange).

BURBANK, R. D., Washington, D. C.: 2 box turtles from Virginia (58662).

BURNUP, HENRY C., Maritzburg, Natal: 24 specimens, 12 species, of named mollusks from Durban and Lower Umkomaas (59675).

BUSCK, AUGUST, Bureau of Entomology, Washington, D. C.: 15 skulls and other parts of human skeletons, a lot of tapa cloth and matting wrappings of the dead—the entire contents of a cave facing the sea at Napoopoo, Hawaii, and 19 lizards and 8 lizard eggs from Kona, Hawaii (59072); specimen of a plant, *Hibiscadelphus giffardianus*, from Hawaii (59735).

BUSCK, WILHELM. (See under Kuhns, D. B.)

BUSH, B. F., Courtney, Mo.: 214 specimens of plants from Missouri (59621, purchase).

BUSHNELL, D. I., jr., Washington, D. C.: 3 quartzite rejects and 20 chips and flakes, from a village site or workshop on the James River, 10 miles below Richmond, Va. (59259).

BUTMAN, CARL, Smithsonian Institution: 182 lithographs, engravings, poster stamps, etc. (59222); a wood-block book and a collection of drawing books, chromolithographs, etchings and engravings (59859).

BYERS, HARRY, Nelson, Mont.: Skull of a woodchuck, *Marmota*, from Montana (59138).

CABINET ICHTHYOLOGIQUE DE L'ACADEMIE D'AGRICULTURE DE MOSCOU. (See under Moscow, Russia.)

CALDWELL, W. R., Glenview, Ill.: 4 postage stamps—Canada, 1870, 3¢ dull red, used; Canada, 1888, 3¢ carmine red, used; Canada, 1890, 3¢ vermilion, used; and New Brunswick, 1861, 5¢ brown, counterfeit, unused (58731).

CALIFORNIA REDWOOD ASSOCIATION, San Francisco, Cal.: 38 specimens of redwood lumber of various patterns, including a large plank 13 feet by 4½ feet by 2½ inches (59570).

CALIFORNIA STATE NORMAL SCHOOL, Los Angeles, Cal. (through Mr. Loye Miller): Skull of a fossil dog, *Canis orcutti*, from Rancho La Brea, Cal. (58589, exchange).

CALIFORNIA, UNIVERSITY OF, Berkeley, Cal.: 304 specimens of plants from Europe (58871, exchange); 1,582 specimens of plants, chiefly from California (59060, 59855, exchange); a cotype slide each of protozoans *Trichomitus parvus* and *Giardia microti*, received through Miss Olive Swezy (59779).

CALLAHAN, HUGH L., Louisville, Tenn.: Fresh-water shells found in shell heaps in the vicinity of Louisville (58574).

CALLENDER, Miss ADA B., Middlebury, Vt.: 59 specimens of plants, mostly from Vermont (58856).

CAMP, R. D., Brownsville, Tex.: About 2,084 mollusks, including land and fresh-water shells, and a number of small crustaceans, from Brownsville and vicinity (58560, 58591, 58682).

CAMPBELL, A. P., U. S. National Museum: Ruby-throated hummingbird, *Archilochus colubris* (59700).

CAMPBELL, S. S., Yacolt, Wash.: Specimen of a chloritic mineral from Clarke County, Wash. (59125).

CANADA, BIOLOGICAL BOARD OF, Pacific Coast Station, Nanaimo, British Columbia (through Dr. C. McLean Fraser): 686 crabs, Pinnotheridae, from British Columbia (59926).

CANADA, GEOLOGICAL SURVEY OF. (See under Victoria Memorial Museum, Ottawa.)

CANAL ZONE, BOARD OF HEALTH LABORATORY, Ancon: 6 snakes from Panama (59832).

CANAVARRO, G. DES., U. S. National Museum: 70 hand samples of American commercial woods (59820).

CARNEGIE INSTITUTION OF WASHINGTON: About 5,000 marine invertebrates, largely corals, and insects, fishes, reptiles, and ferns, collected by Mr. Clarence R. Shoemaker in St. Thomas, St. John, and St. James, Danish West Indies (58705); specimens of plants, marine invertebrates, reptiles, batrachians, insects, and hummingbird nests, obtained by Dr. J. N. Rose in Brazil and Argentina (58885); 18 living specimens of plants, mainly Cactaceae, collected by Dr. D. T. MacDougal in Arizona and California (59433, 59513, 59615, 59793); 5,000 land and marine mollusks from the Florida Keys, collected by Dr. Paul Bartsch (59946). (See under Brinkley, Sterling G.)

CARR, HARRY E., Spokane, Wash.: Drilled ceremonial tablet or "charm stone," found by the donor near Leavenworth, Wash. (59185).

CARTER, HUGH THOMAS, Washington, D. C.: Dog travois and a painted skin tent in miniature, from Mountain Chief, a Blackfoot Indian, Mont. (58959); 33 Indian and Eskimo ethnological objects (59688, purchase).

CARTER, N. E., Elkhorn, Wis.: 2 fraudulent copper implements from Wisconsin (58962).

CARTER, RALPH E., Naskeag, Me.: Stone ax, stone hammer, and miscellaneous bones, collected by the donor from a shell heap at Naskeag (58848); skull of a whistling swan, *Olor columbianus*, from Maine (59331).

CAUDELL, A. N., Bureau of Entomology, Washington, D. C.: Lizard, *Phrynosoma*, from Oklahoma (59167).

CENTURY CO., THE, New York City: 3 original engraved wood blocks by Timothy Cole (59937, purchase).

CHACE, E. P., Los Angeles, Cal.: 5 specimens of the introduced mollusk, *Helix pisana*, acclimated in California, from

CHACE, E. P.—Continued.
La Jolla, and 6 of *Pecten monotimeris* from Orange County, Cal. (59043); 6 land shells from Los Angeles (59475).

CHALMERS, R. BUDD, Norfolk, Va.: 4 sponges, *Tetilla gravata*, collected on the Ocean View side of Hampton Roads in Chesapeake Bay, on the Virginia coast (59709).

CHAMPION, H. G., Woking, England: 2 specimens of plants from Colorado (58789); 6 beetles, consisting of 3 specimens of *Zarhipis*, 1 of *Leptocoleus* and 2 of *Stenochidus* (58930).

CHANEY, Mrs. C. S., Salem, Mass.: Mollusk, *Voluta junonia*, from Tarpon Springs, Fla. (59712).

CHAPMAN, R. H., Washington, D. C.: Skull of a mountain goat from Montana (59465).

CHASE, Mrs. AGNES, Bureau of Plant Industry, Washington, D. C.: 53 specimens of plants from the District of Columbia and vicinity (58703, 59308).

CHEN CHI. (See under China, Commission of the Republic of, Panama-Pacific International Exposition.)

CHENEY BROS., South Manchester, Conn.: 46 views showing silk manufacture (58893); a series of 25 specimens illustrating the designing, weaving and printing of silk upholstery and drapery fabrics (59368).

CHICAGO, UNIVERSITY OF, Chicago, Ill.:
Walker Museum: 140 plastotypes representing 131 species of Paleozoic fossils (59394, exchange).
Yerkes Observatory (Williams Bay, Wis.): 13 photographic prints from astronomical negatives made at the Yerkes Observatory, received through Dr. Edwin B. Frost, director (58988).

CHINA, COMMISSION OF THE REPUBLIC OF, PANAMA-PACIFIC INTERNATIONAL EXPOSITION, 1915, San Francisco, Cal. (through Mr. Chen Chi, commissioner-general): 176 specimens of agricultural products from the provinces of Anhui and Kiangsi, China (59660).

CHITTUM, C. H., Lexington, Va.: Nest of Baltimore oriole, *Icterus galbula*, from Virginia (59323).

CHRISMAN, MORRIS, Redington, Ariz.: 3 specimens of Lepidoptera, *Agapema anona* (59508).

CHRISTIAN, Miss VIE, Beaver, Utah: 19 stone implements collected by the donor in the neighborhood of Beaver (58745).

CHRISTY, FRANK, Fort Yates, N. Dak.: Skull of a Sioux Indian woman (59930).

CLAPP, E. D., Washington, D. C.: Iron bolt from one of the lock walls of the canal constructed between 1785 and 1802 around the Great Falls of the Potomac River by the Potomac Company, of which George Washington was the first president (59428).

CLAPP, GEORGE H., Pittsburgh, Pa.: 10 mollusks, *Liguus crenatus septentrionalis*, from Fort Lauderdale, Fla. (59396).

CLARK, AUSTIN H., U. S. National Museum: Crinoid, type of *Comanthus benhami*, from southwestern New Zealand (59764).

CLARK, Dr. B. L., University of California, Berkeley, Cal.: 40 specimens, representing 22 species, of Tertiary mollusks from California, described by the donor (59156).

CLARK, B. PRESTON, Boston, Mass.: 19 rare exotic sphingid moths (59484).

CLARK, ELTON, Framingham Center, Mass.: 8 skins and 13 skulls of large mammals from German East Africa (59209, 59407); 7 skulls and a scalp of large mammals collected by the donor and Mr. T. P. Lindsay in German East Africa (59773); skull of a gnu from British East Africa (59463).

CLARK, JAMES L., New York City: Skin and skull of a duiker, *Cephalophus sylvicultrix* (58582, purchase); skull of a giraffe and of a water buffalo, from British East Africa, and skull of a caribou, *Rangifer terræ-novæ*, from Newfoundland (58658, 58767, exchange); skins and skulls of 2 deer, *Odocoileus*, from New Brunswick, Canada (58913); 8 moose skulls and a caribou skull, from Canada, and skull of a deer, *Odocoileus*, from New York (59036, 59159,

CLARK, JAMES L.—Continued.
exchange); 13 skulls of large mammals (59316, exchange); 11 large mammal skulls from Canada and Alaska (59381, exchange); skulls of 2 moose, a caribou, a deer and 2 mountain sheep (59464, exchange).

CLARK, JOHN J., Pascagoula, Miss.: Phosphatic concretion (58826).

CLARKE, Prof. F. W., U. S. Geological Survey, Washington, D. C.: The Wilde Gold Medal, Manchester (England) Literary and Philosophical Society, awarded to Prof. Clarke on the occasion of the Dalton Centenary, 1903 (59837, loan). (See under Allen, Frederick I.; Bement, Clarence S.; and Iles, George.)

CLEMENT, Mrs. ERSKINE, Newburyport, Mass. (through Mrs. Julian-James): Dress, handkerchief and pair of slippers which belonged to Mrs. Louisa Catherine Adams, wife of President John Quincy Adams, and 2 handkerchiefs, one of which belonged to President John Adams and the other to President John Quincy Adams (58706, loan).

CLERK, W. T., Washington, D. C.: Pair of Tlinkit snowshoes collected in Chilkat Inlet, Alaska, in 1885 (59701).

CLIFTON, E. (See under New Zealand, Commission of the Dominion of, Panama-Pacific International Exposition.)

CLOKEY, IRA W., Decatur, Ill.: 7 specimens of sedges, *Carex*, from Illinois (58829); 124 specimens of plants, chiefly from Illinois (58994, exchange).

COCKERELL, Prof. T. D. A., University of Colorado, Boulder, Colo.: A fossil plant and 3 fossil insects (58640); 32 miscellaneous insects, type, paratype, pupa and eggs of *Microdon coloradensis*, and type, paratype and pupa of *M. tristiformis* (58688); specimen of a fern from Lower California (58774); 35 insects, including 8 determined bees (58934); insects, consisting of types of *Phyciodes* ab. *rohweri* and *tristis; Chironomus guatemaltecus, Dohrniphora guadialis, Dasyneura stanleyæ, Microcerata iridis* and determined specimens of 11 species of Hymenoptera (59340); type specimen of fossil insect in amber, from the Cretaceous of Tennessee (59355);

COCKERELL, Prof. T. D. A.—Continued.
crustacean collected at La Jolla, Cal., in 1915, by Miss Hazel Andrews (59439); types of white-flies, *Aleyrodes mori arizonensis, Aleyrodicus jamaicensis* and *A. ornatus* (59493). (See under Daniels, L. E.)

CODAZZI, RICARDO LLERAS, Bogota, Colombia, South America (through Dr. Joseph E. Pogue): Specimen of emerald with carbonaceous inclusions, from Muzo, Colombia (59217).

CODWISE, Miss LOUISE SALTER, Kingston, N. Y.: 84 relics of the Salter and Codwise families of New York and New Jersey, an addition to "The Louise Salter Codwise Collection" (58919, loan); 28 ethnological objects, 22 specimens of Old World archeology, a small bottle of garnets from Arizona and a staurolite from Virginia (58920).

COLBURN, ALBERT E., Los Angeles, Cal.: 7 lizards, 9 salamanders, 2 shells and a centipede, from Coronado Islands (58632).

COLE, F. R., Bureau of Entomology, Washington, D. C.: About 225 Hymenoptera from California, and a specimen of Diptera, *Microdon* n. sp. (58937).

COLE, Mrs. NELLIE G. (See under Ransom, Miss Irene, Estate of.)

COLEMAN, Dr. WILLIAM MACON, Washington, D. C.: A gorgonian (58903).

COLLINGE, Dr. WALTER E., The University, St. Andrews, Scotland: Crustaceans from St. Andrews Bay, consisting of 32 specimens of *Idotea baltica*, 12 of *I. pelagica*, 6 of *I. neglecta*, 6 of *I. emarginata*, 2 of *I. granulosa*, 36 of *I. linearis*, 18 of *Thysanæssa tenosa* (?) and 9 of *Chondracanthus lophii* (59763, exchange).

COLLINS, F. S., North Eastham, Mass.: 50 specimens of algæ, Phycotheca Boreali-Americana, Fascicle XLII (59583, purchase).

COMBS, CLARK W., Washington, D. C.: Needlecase and a silk purse (58561).

COMMERCE, DEPARTMENT OF:
Bureau of Fisheries: About 10,000 crustaceans, *Euphausiacea*, including 2 types of new species, identified by

COMMERCE, DEPARTMENT OF—Contd.

Dr. H. J. Hansen (58588), 183 lots of *Pyrosoma* and *Salpa*, reported on by Dr. Maynard M. Metcalf (59047, 59145), about 150 starfishes, nearly all of which are type specimens, reported on by Dr. Walter K. Fisher (59290), and about 1,000 specimens, representing 35 species, of annelids (59350), all of the foregoing being obtained during the Philippine expedition of the Fisheries steamer *Albatross*, 1907–1910; about 500 pteropod mollusks, collected by Dr. H. B. Bigelow on the first cruise of the Fisheries schooner *Grampus* in the spring of 1915 (58602); medusa, type specimen of *Eperetmus typus*, collected by the *Albatross* during the Alaska cruise of 1905, Station 4754, and described by Dr. Bigelow (58620); mammals, birds, fishes and marine invertebrates, collected in Alaska by Mr. E. P. Walker (58653); 42 specimens of algæ from the coral reef off-shore from Beaufort, N. C. (58781); 33 crinoids, *Metacrinus rotundus*, collected in 1900 by the *Albatross*, in Sagami Bay, Japan (58836); hydroid, *Thuiaria argentea*, obtained by Mr. Thomas M. Douthart off Nantucket (58862); about 5,000 decapod crustaceans collected by the *Albatross* during the northwestern Pacific cruise, 1906 (58946); 150 marine shells from the beach at Northeast Point, St. Paul Island, Alaska, collected by Mr. G. Dallas Hanna, and 345 marine invertebrates, 29 fishes, 365 insects, a bottle of seaweed, a diseased bird and diseased feet of birds, collected by Mr. Hanna during 1914 and 1915 on the Pribilof Islands (59028, 59385); isopod crustaceans, consisting of *Phryxus subcaudalis*, new species, *Pseudione upogebiæ*, new species, and *Synisynella deformans*, new genus and new species, collected by Prof. W. P. Hay at Beaufort, N. C. (59049); 62 bird skins, 2 bird skulls, the sternum of a bird, a box of fossil mollusks, 1 of marine shells, and 7 boxes of fungi, from St. Paul Island (59152); 80 vials of fresh-water plankton collected at Finger Lakes, N. Y., by Dr. E. A. Birge and Prof. Chancey Juday, and 50 vials of fresh-water plankton from various localities collected by Mr. W. R. Boorman (59268); collection of plankton made by Mr. Boorman in the northwestern United States, New York and Alaska (59754); 267 vials of mollusks and 179 bottles of crustaceans from surface towings, etc., collected by the surveying steamer *Bache* in 1914 (59305, 59586); fresh-water mussels from Punjab, India, consisting of 4 specimens of *Lamellidens marginalis*, 2 of *Parreysia favidens*, and 2 of a new species of *Parreysia* related to *P. favidens* (59398); 2 isopods, *Sphæroma destructor*, collected at Manchac, La. (59399); 99 fishes, mostly types and paratypes, collected by the *Albatross* and received through Leland Stanford Junior University (59423); a barrel of fishes collected for the most part by the *Albatross* in 1887 and 1888 on the voyage around Cape Horn, in the Pacific Ocean off the coast of California and northward, and along the coasts of Japan, received through Stanford University (59889); 22 living specimens of Cactaceæ, collected by Mr. Charles Hatsel in North Carolina (59469, 59514); 7 lynx skulls and 1 each of a bear, wolf and marten (59522); 6 soft-shell turtles from Iowa (59594); fishes, reptiles, invertebrates and insects (59597); a series of exhibition specimens of fishes and invertebrates of Great Britain (59608); about 1,000 fresh-water mollusks collected in the Mississippi River in the region of Fairport, Iowa (59616); skulls of 2 bears, 2 red foxes, 3 minks, 2 porcupines and 6 lynxes (59669); 11 coelenterates, 12 worms, 30 crustaceans, 50 mollusks, 2 scorpions, 3 fishes, 2 diseased halibut stomachs, 12 amphibians, a reptile and a gopher, collected by the *Albatross* (59706); skin and skull of an arctic fox, *Alopex*, from St. Paul Island (59743); about 3,000 marine invertebrates collected by the Fisheries steamer *Fish Hawk* in the Chesapeake Bay in the fall of 1915 and the spring of 1916 (59755); specimen of an hepatic, *Riccia*, from Iowa (59829); 11 batrachians from South Carolina, collected by Mr. W. W. Welsh (59846); 28 specimens,

COMMERCE, DEPARTMENT OF—Contd.
10 species, of chitons, including 4 types of new species, collected by the *Albatross* in the northwest Pacific and surrounding waters during the summer of 1906, and reported on by Mr. S. S. Berry (59919).

Coast and Geodetic Survey: 10,960 bottles containing specimens of ocean bottom from the Atlantic, Gulf and Pacific coasts, secured by vessels of the survey (58968).

CONGER, Hon. FRANK B., Washington, D. C. (through Mr. De Lancey Gill): Large basket obtained by the donor some thirty or more years ago from the chief of one of the Northwest Coast tribes (59933).

CONGRESS, LIBRARY OF. (See under Hamilton, Allan McLane.)

CONKLIN, CHARLES E., Roelyn, N. Y. (through Bureau of Plant Industry, Washington, D. C.): 2 living specimens of cactus *Mamillaria*, originally from Mexico (59684).

CONKLIN, Dr. GEORGE H., Superior, Wis.: Specimen of liverwort, *Scapania paludicola*, from Wisconsin (59245).

COOK, Dr. O. F., Bureau of Plant Industry, Washington, D. C.: 3 mollusks collected in Peru (59130).

COOKE, Miss MAY THACHER, Washington, D. C.: 383 mounted specimens of plants from Massachusetts (59664).

COPENHAGEN, DENMARK, UNIVERSITETETS ZOOLOGISKE MUSEUM (through Dr. Will Lundbeck): Larvæ of sawflies, consisting of several specimens each of *Pteronus similis*, *P. hercyniæ*, *P. pallidus* and *Neodiprion sertifer* (58628).

CORNISH, Lieut. G. R. F., Manila, P. I.: 9 snakes from Samar Island, Philippines (59699).

COUGHLIN, PAUL, Hyattsville, Md.: 2 dragonflies from Hyattsville (58692).

COVERE, L. H., Kinsman, Ohio: Specimen of mole-cricket, *Gryllotalpa borealis* (59496).

COVILLE, FREDERICK V., Bureau of Plant Industry, Washington, D. C.:

COVILLE, FREDERICK V.—Continued.
250 specimens of hepatics from New York State (59020, 59345).

CRAIG, Col. ROBERT, U. S. Army, Washington, D. C.: Ladies' ticket to "Grand Inauguration Ball to be given by the 12th Ward Democratic Association of Philadelphia, at the Assembly Rooms, Louisiana Avenue, Washington, D. C., on Tuesday evening, March 3, 1857" (58587); bill of fare and an invitation card of a dinner to President Johnson in 1867, and a Continental bill of 1777 (58978); a photograph of Hon. Benjamin F. Wade, U. S. Senator from Ohio, 1851 to 1869, and one of Hon. D. W. Mahon, First Auditor, U. S. Treasury Department, December 19, 1871, to March 31, 1878 (59592).

CRAIGHEAD, F. C., Bureau of Entomology, Washington D. C.: Specimen of a plant, *Centaurea*, from Virginia (59086).

CRANE, Mrs. W. MURRAY, Sugar Hill, Dalton, Mass. (through Mrs. Julian-James): Gentleman's hat and waistcoat of the early part of the 19th century (59408).

CRAWFORD, Prof. D. L. (See under Pomona College.)

CROFT, GLENN, Willard, Utah: Obsidian "duckbill" scraper and 4 arrowpoints and fragments, found by the donor at Willard (58734).

CROMPTON & KNOWLES LOOM WORKS, Worcester, Mass.: Modern 416-hook, double-lift, single cylinder, Jacquard machine (58842).

CROMWELL, DAVID W., New York City: Collection of postage stamps of the United States and foreign countries (formerly a loan) (59959).

CRONE, FRANK L. (See under Philippine Islands, Government of the.)

CROSBY, J. H., Kanab, Utah: 21 arrowpoints, spearheads and fragmentary stone implements, collected by the donor near the mouth of Johnson Canyon, about 15 miles east of Kanab (58742).

CROSTHWAITE, Miss FOREST M., Washington, D. C.: Uniform coat worn dur-

CROSTHWAITE, Miss FOREST M.—Contd. ing the Mexican War by Lieut. Baldwin J. Crosswait, Co. A, 3rd Ohio Infantry (58843).

CULLER, Mrs. D. F., Strasburg, Va.: 2 gold watches of the early part of the 19th century, costumes and accessories of the period of the Civil War, and miscellaneous relics (59956, loan).

CUMMING, Mrs. GORDON, Washington, D. C. (through Mrs. R. G. Hoes): Miniature portrait of Capt. John Hazard and diploma of Malcolm Campbell as a graduate of St. Andrews University, Scotland (59835, loan).

CURRAN, H. N., Laurel, Md.: 350 specimens of plants from Brazil (59427, purchase); a pannier basket made of lianas, obtained in Bahia, Brazil (59681). (See under Argentina, Comision de la Exposicion Universal, 1915, San Francisco, Cal.)

CUTLER, Prof. IRA E., University Park, Colo.: Specimen of a rose from Colorado (58949).

DALL, M. H., Samarcand, N. C. (through Dr. William H. Dall, U. S. National Museum): Specimen of Tuckahoe or Indian bread (59302).

DAMON, ROBERT F., Weymouth, England: Series of 5 plaster models representing the evolution of the human jaw (59297, purchase).

DANIELS, L. E., Laporte, Ind. (through Prof. T. D. A. Cockerell): Type specimen of a Carboniferous insect, *Danielsiella priscula*, from Mazon Creek, Ill. (59320).

DAVIDSON, Dr. A., Los Angeles, Cal.: 3 specimens of plants from California (58948).

DAVIS, CARL S., Siletz, Oreg. (through Dr. Leo J. Frachtenberg): Deck of 13 guessing-game sticks, a mat and a bunch of grass, used by the Rogue River Indians of Oregon in playing the guessing-game (59295).

DAVIS, Mrs. LOUISA F., Shipman, Va.: 2 hand cards for carding wool, used by slaves between 1856 and 1865 on the plantation of Mary C. Purvis, mother of the donor (58969).

DAWSON, Dr. H. D., Magdalena, N. Mex.: Chipped implement of unusual type, found in western Socorro County, east of Eagle Peak, N. Mex. (59901).

DEAM, CHARLES C., Bluffton, Ind.: 72 specimens of plants from Indiana (59324, exchange).

DEAN, REGINALD SCOTT, Missouri School of Mines, Rolla, Mo.: Specimen of pyrite from Rolla (59633).

DEANE, WALTER, Cambridge, Mass.: 443 specimens of plants from New Hampshire (59188).

DECORUS MANUFACTURING CO., THE. (See under Freund, Theodore.)

DELUNA, JAMES B. and EDWARD. (See under Beers, Nathan Perry.)

DENSMORE, Miss FRANCES, Bureau of American Ethnology: 8 specimens illustrating the customs of the Chippewa Indians of Minnesota (59148, loan); 18 specimens illustrating the customs of the Mandan and Hidatsa Indians of Fort Berthold, N. Dak. (59153, loan); 8 ethnological objects gathered by Miss Densmore in the summer of 1915 among the Ute Indians (59951, purchase).

DENVER ROCK DRILL MANUFACTURING CO., THE, Denver, Colo.: "Waugh" valveless stoping drill and accessories (59579).

DEVILBISS MANUFACTURING CO., THE, Toledo, Ohio: Apparatus for spraying paint, varnish, etc., on wood, metal, etc. (58950, loan).

DIAMOND MATCH CO., THE, New York City: 46 specimens showing the various processes in the manufacture of matches (59781).

DIBRELL, Mrs. JOSEPH B., Seguin, Tex. (trustee of statue, under the auspices of the Texas Fine Arts Association and Elisabet Ney Museum, Austin, Tex.): Marble statue of Lady Macbeth, by Elisabet Ney (59944, loan).

DIMMOCK, GEO., Springfield, Mass.: Collection of biological material of longhorn beetles, Cerambycidæ, with notes on the same; some Cuban roaches and blattids, and earwigs, forficulids (59482).

DISCH, Mrs. H. J., Sicily Island, La.: 2 nests of a Baltimore oriole, *Icterus galbula*, from Louisiana (58847).

DIXON, JOSEPH, CRUCIBLE Co., Jersey City, N. J.: Series of specimens of crude natural graphite ore, and examples of refined graphite and its application for various uses (58698).

DODGE, BYRON E., Davison, Mich.: Deer skull, and 5 human skulls and 5 separate lower jaws found in a mound in Lapeer County, Mich. (59286).

DODGE, HORACE A., Washington, D. C.: Original model of the McCurdy developing machine, patented August 26, 1902 (59161).

DONALDSON, Miss HARRIET FENWICK, West River, Md.: Sampler worked by Ann Louisa Ghequiere of Baltimore, Md. (59228, loan).

DOUGLAS, JOHN L., jr., Lynch Station, Va.: Archeological specimens of stone, bone, shell and pottery and an Indian skeleton, found near Lynch Station (59890).

DOUGLASS, WILLIAM B., General Land Office, Washington, D. C.: Contents of a shrine in New Mexico, a small model and 4 photographs of the shrine and surroundings, a stone object from another shrine, and offerings from the War God shrine, Jemez Pueblo, N. Mex. (59271); 5 stone relics and a silver ornament, buckle, from New Mexico (59272, loan).

DOWELL, PHILIP, Port Richmond, N. Y.: 8 specimens of plants from Washington, D. C., and vicinity (58732); 100 specimens of plants, *Sphagnum*, from Staten Island, N. Y. (58993). Exchange.

DOWLING, Dr. THOMAS, Washington, D. C.: Railroad car-coupling link (58661, loan).

DRUERY, CHARLES T., London, England: 13 specimens of ferns from Sonora, Mexico (59006).

DRUKKER, Hon. DOW H., Passaic, N. J.: Specimen of prehnite from Richfield, N. J. (58590).

DUBLIN, UNIVERSITY OF, Dublin, Ireland (through Prof. L. White King): 58 archeological objects from Great Britain (59566, exchange).

DU BOIS, A. D., Belton, Mont.: Skin of the Montana junco, *Junco hyemalis montanus* (58768).

DUNN, E. R., Alexandria, Va.: 3 snakes from Virginia (58726).

DUNN, L. H., Ancon, Canal Zone: 9 specimens of plants from Panama (59569).

DUNNE, WM. P., Sherman, Tex.: Mollusk, *Limax flavus*, from Sherman (59002).

DUNSHEE, B. H., Butte, Mont.: Specimen of copper sulphate from Silver Bow mine, Butte (59333).

DURY, CHARLES, Cincinnati, Ohio: 11 species of beetles from Arizona, including 3 species new to the Museum collections (58931); 11 beetles, including 5 species new to the Museum collections (59507); 22 beetles, 11 species, including 2 cotypes of *Phlæophagus variolatus* (59552, exchange).

DYER, FRANCIS J., American consul, Ceiba, Honduras: Insects and mollusks from Lynchburg, Va., and New Orleans, La. (59019); about 300 specimens, 17 species, of mollusks, some plants, insects, snails and a lizard, all from Honduras (59066, 59267, 59371, 59551, 59553, 59665, 59738).

ECONOMIST STAMP Co., New York City: 142 20th century, foreign postage stamps (59141, purchase).

EGGLESTON, W. W., Bureau of Plant Industry, Washington, D. C.: 190 specimens of plants from Missouri (59801).

EINSTEIN-WOLFF Co., New York City: 8 specimens of machine-embroidered net flouncings, showing the use of tinsel threads, a sample of machine-embroidered voile flouncing and 1 of Plauen metal lace (59190).

EISENHAUER-MACLEA Co., Baltimore, Md.: 4 specimens of wood—1 each of mahogany, poplar, oak and cherry (59825, purchase).

ELLIS, Miss CHARLOTTE C., Springerville, Ariz.: 23 specimens of plants from Arizona (59450).

ELLIS, Miss NANNIE KENT, Shawsville, Va.: A silk dress of the date of 1860 (58927, loan).

ELMS & SELLON, New York City (through Mr. N. W. Doorly): 7 samples of domestic cotton prints (59682).

ERNEST, J. B., Washington, D. C.: 51 arrowpoints and spearheads from Montgomery County, Md. (59023).

ERVING, Dr. W. G., Washington, D. C.: 4 lizards and some insects (59719).

FALKENBACH, OTTO, New York City: 8 casts of mastodon bones (59914, purchase).

FARGO, Dr. L. W., Augusta, Ga.: Mass of siliceous septaria from Grovetown, Ga. (59403).

FENDALL, Mrs. WILLIAM E. (See under Tillinghast, Miss Edythe.)

FERGUSON, JOHN C. (See under Lewis, Mrs. Spencer.)

FERGUSSON, Miss PERCY, Biloxi, Miss.: Larvæ and parasites of insects, *Empretia stimulea* (58854).

FERNBACH, O. H. (See under Panama-Pacific International Exposition.)

FERRIER, W. F., Toronto, Ontario, Canada: 2 specimens of hyalite from Canada, and 1 of tennantite var. binnite from Switzerland (59354, exchange).

FERRISS, JAMES H., Joliet, Ill.: 124 specimens, many of them cotypes, representing 24 species or subspecies of land shells belonging to the genera *Sonorella*, *Ashmunella*, *Oreohelix* and *Holospira*, from Arizona and New Mexico (59418).

FEWKES, Dr. J. WALTER, Bureau of American Ethnology: A skeleton and a small lot of potsherds, etc., excavated on an old camping site on Wolf Creek in the Panhandle, Tex., 7 stone objects from the Panhandle, and a stone ball from near Cortez, Colo., collected by the donor in the autumn of 1915 (59314); a double cup of decorated earthenware, collected by the donor on the Mesa Verde, Colo. (59840). (See under Rücknow, Leo.)

FIELD, MARSHALL, & Co., Chicago, Ill.: 26 samples of printed drapery fabrics (59938).

FIELD MUSEUM OF NATURAL HISTORY, Chicago, Ill.: 47 specimens of ferns from Cuba and the United States (58890, 59414); 98 specimens of grasses (59053); 2 specimens of plants from Yucatan (59065, 59555); 18 specimens of ferns chiefly from Mexico (59241); 80-gram specimen of the Whitfield County, Ga., meteorite (59329); 227-gram piece of the Locust Grove, Ga., meteoric iron (59917). Exchange.

FINK, Prof. BRUCE, Miami University, Oxford, Ohio: 50 specimens of plants, *Sphagnum*, from Minnesota (59005, exchange).

FISHER, GEO. L., Houston, Tex.: 123 specimens of plants from Texas (58570, 58636, 58785, 58990, 59242).

FITZGERALD, D., Lawton, Okla.: Specimen of jasper quartz and of zircon in matrix (58841, 59642).

FLETCHER, CHARLES R., Los Angeles, Cal. (through Dr. Fred. E. Wright, Washington, D. C.): Specimen of obsidian with lithophysæ from Little Lake, Cal. (59768).

FLETCHER, T. BAINBRIDGE, Imperial entomologist, Pusa, India: 2 insects, *Chlorodryinus pallidus?* (58690).

FLINN, Dr. M. A., Portland, Oreg.: Specimen of an alga, *Nostoc parmelioides*, from Washington (58730).

FLORIDA STATE GEOLOGICAL SURVEY, Tallahassee, Fla.: 6 specimens of plants from Florida (59013, exchange).

FLOURNOY, JAMES C. (See under Jones, Howard.)

FOERSTE, Prof. AUGUST F., Dayton, Ohio: 75 bryozoans from the Richmond formation of Ontario, Canada (58798).

FOOTE MINERAL CO., Philadelphia, Pa.: 2 specimens of zirkite from South America (59581, exchange); 15 specimens of meteorites (59918, purchase).

FORD, JAMES H., Strang, Okla.: Clay-iron-stone concretion (58985).

FOREST PRODUCTS CO., New Orleans, La. (through Mr. J. C. Mims): Series of specimens illustrating stages in the distillation of pine wood and the by-

FOREST PRODUCTS CO.—Continued.
products obtained from the use of this process at the Slidell plant, Slidell, La. (59823).

FORREST, W. R., Antigua, West Indies: 2 fossil corals from Antigua (59172); 209 land and fresh-water shells from Antigua and Barbuda, and a lot of bivalve crustaceans (59189).

FÖRSTER, Prof. F., Oberkirch, Baden, Germany: Skin and skull of a New Guinea rat, *Mallomys* (59298, purchase).

FOX, Miss EFFIE D., Dansville, N. Y.: Larva of a humming-bird moth, *Ampelophaga myron* (58711).

FOX, Dr. HENRY, Bureau of Entomology, Washington, D. C.: About 500 Orthoptera and 25 miscellaneous insects, from Indiana and Virginia (59495).

FOX, Dr. W. S., Assistant Surgeon, P. H. Service, U. S. Coast Guard Service, Washington, D. C. (through Dr. W. H. Dall): 28 marine shells from the beach, Unimak Bay, Unimak Island, Alaska (59950).

FRANCE, COMMISSARIAT GÉNÉRAL DU GOUVERNEMENT FRANÇAIS A L'EXPOSITION UNIVERSELLE DE SAN FRANCISCO, 1915, San Francisco, Cal.: Examples of pharmaceutical products exhibited by Astier Pharmacie and Clin et Cie, Paris, specimens of animal products exhibited by M. Artus, Adjuticaire des Abattoirs, de la Ville de Paris, and a specimen of leather exhibited by Victor Lanier et Fils (59672).

FRASER, LOVAT, New York City: 18 cut Montana sapphires and a cut kunzite (59785, purchase).

FREDERICK, CHARLES, Frederick, Wyo.: Shallow metate found by the donor on the surface near Frederick (58737).

FREMONT, Miss JESSIE BENTON, Washington, D. C.: Persian cat (59134).

FREUND, THEODORE (through The Decorus Manufacturing Co., New York City): Silk scarf spray-printed by means of the airograph machine (58851).

FREYTAG, OSCAR E. (See under Oregon Commission, Panama-Pacific International Exposition.)

FRIERSON, L. S., Frierson, La.: Fresh-water mussel, *Diplodon bednalli*, from Australia (58701).

FROST, Dr. EDWIN B. (See under Chicago, University of, Yerkes Observatory.)

FULL, WEBSTER, Cuba, Mo. (through Hon. Thomas L. Rubey): Spy glass (59201).

FULTON, Miss ALMA, St. Francisville, La.: Specimen of fungus, *Mutinus ravenelii*, from Louisiana (59200).

GALLOWAY, Dr. C. C., Washington, D. C.: Landscape in oil, by Diaz (59589, loan).

GALLOWAY, J. J., University of Indiana, Bloomington, Ind.: Fragments of the types of 19 species of Paleozoic bryozoans (59740).

GANT, WILLIAM M., and FRANK JORDAN, Sentinel, Ariz.: Lizard, *Sauromalus*, from Arizona (59604).

GEE, Prof. N. GIST, Soochow University, Soochow, China: 45 invertebrate fossils and a small collection of insects, from Loen Nyen Jao, near Soochow (58641); small collection of insects and spiders (58700); 340 Chinese coins, consisting of 78 copper, 8 brass modern and 254 bronze antique specimens (58975); small collection of insects from South Carolina (59503).

GEORDGE, Mr. and Mrs. DAVE, Beaver, Utah: Stone amulet, earthen bowl and neck of an earthen bottle, found in mounds on the J. H. Bradshaw place, a mile east of Beaver (58743).

GEORGIA MARBLE CO., Tate, Ga. (through Ward's Natural Science Establishment, Rochester, N. Y.): Rough trimmed block of crystalline limestone (58760).

GERNERT, W. B., Illinois Agricultural Experiment Station, Urbana, Ill.: Specimen of the so-called "branch corn," *Zea ramosa* (59426).

GIBSON, Mrs. T. G., Meadow Gap, Pa.: Indian pipe of cavern alabaster, from a prehistoric cave in West Virginia (59106, purchase).

GILBERT, J. Z., Los Angeles, Cal.: Type specimen of the fossil fish *Evesthes jordani* (58853).

GILHAM, F. M., Highland Springs, Cal.: Miniature Pomo Indian basket (59375).

GILL, DE LANCEY. (See under Conger, Frank B.)

GILL, Mrs. MARY WRIGHT, Washington, D. C.: Set of Chinese chess in carved ivory (59144); a fan, 4 parasols, a gentleman's white satin vest and a collection of ladies' wearing apparel, of the early 19th century (59734). Exchange.

GILLETT, Mrs. ALFRED S., Washington, D. C.: Tortoise-shell cardcase inlaid with mother-of-pearl (59024, loan).

GILLETTE, Maj. CASSIUS E.: Earthenware head from Guadalcagar, San Luis Potosi, Mexico (58904).

GLENN, MILTIADES L., Erie, Pa.: Specimen of anorthoclase feldspar from the Hartshorn Quarry, Essex County, N. J. (58814).

GODDARD, J. W., & SONS, New York City: Sample of resilient dress lining, "Witchtex," made from wood pulp (59925).

GODSON, Miss ELIZABETH, Washington, D. C.: 10 small specimens of Philippine woods mounted in frame of Philippine molave wood (59824).

GOLISCH, W. H., Los Angeles, Cal.: 50 specimens, 4 species, of land shells from Santa Barbara Islands, Cal. (59289).

GOOD, C. A., Smith's Cove, Nova Scotia: 4 chalcid flies, the types of *Halticoptera goodi* (58932).

GORDON, SAMUEL G., Academy of Natural Sciences, Philadelphia, Pa.: Specimen of ceruleolactite from Chester County, Pa. (59517).

GOUVERNEUR, Miss MAUDE CAMPBELL, Washington, D. C. (through Mrs. R. G. Hoes): A pair of Sheffield plated candlesticks owned by Mrs. Monroe and used at the White House during the administration of James Monroe, 1817–1825, and a pair of Sheffield plated candlesticks marked with the Hazard crest (58696); piece of blond lace embroidered in red flowers and green leaves (59694). Loan.

GRAND PRE, E. A., Willard, Utah: Grooved hammer and a bone awl, found on the surface near Willard (58736).

GRAND PRE, EDGAR, Willard, Utah: Discoidal rubbing stone found by the donor on the surface near Willard (58735).

GRANT, J. M., Sequim, Wash.: 25 crustaceans, consisting of 15 specimens of *Hemigrapsus nudus* and 10 of *H. oregonensis*, collected by the donor (58578); 83 specimens of plants from Washington (59445).

GRAVES, Prof. A. H., Yale University, New Haven, Conn.: 150 specimens of plants, *Sphagnum*, from Georgia and North Carolina (59041, exchange).

GREEN, Prof. E. C., Washington, D. C.: 3 living specimens of Cactaceae from State of Rio Grande do Norte, Brazil (59104).

GREENE, Dr. EDWARD L., Notre Dame University, Notre Dame, Ind.: 29 specimens of plants (58544).

GREENE, G. M., Philadelphia, Pa.: 3 Diptera, *Euparyphus tetraspilus* (58933).

GREENHOUGH, DAVID, Kanab, Utah: Flint knife and 3 earthenware vessels, collected by the donor at the mouth of Johnson Canyon, about 15 miles east from Kanab (58738).

GREENLEAF, RICHARD CRANCH, Lawrence, Long Island, N. Y.: A coat worn by John Adams, and a brooch containing locks of hair of John Adams, Abigail Adams, and John Quincy Adams (59931, loan).

GREENWOOD, J. K., Co., Paterson, N. J.: 3 sample twin skeins of thrown silk, especially dyed and reeled for weaving colored check and plaid ribbons, and 10 samples of check and plaid ribbons woven from the twin skeins (58983).

GRIGGS, Prof. R. F., Ohio State University, Columbus, Ohio: 100 specimens of plants, *Sphagnum*, from Ohio (59039, exchange).

GRONBERGER, S. M., Smithsonian Institution: 6 specimens of 3-color printing process, rubber offset and rotary intaglio (59237).

GROSVENOR, GILBERT H., Washington, D. C.: Snake, *Heterodon constrictor*, from Maryland (59769).

GUIROLA, Señor Don RAFAEL, San Salvador, Salvador (through Mr. George Mixter, Boston, Mass.): Deer from San Salvador (59830).

GUM LUMBER MANUFACTURERS' ASSOCIATION, Memphis, Tenn.: Red gum board (59877). (See under Hardwood Products Co., and Louisville Veneer Mills.)

GUNTHER, C. F., Chicago, Ill.: Painting of Christopher Columbus, by Sir Antonio Moro, about 1545 (59710, loan).

HAGGOTT, ERNEST A., Battle Mountain, Nev. (through Mr. Frank L. Hess, Washington, D. C.): Specimens of wood tin and associated rock (58812).

HALTON'S SONS, THOMAS, Philadelphia, Pa.: 200-hook, single-lift Jacquard machine (58833).

HAMBLIN, F. M., Kanab, Utah: Part of a stone pestle, found by the donor about 25 miles northeast of Kanab (58741).

HAMET, RAYMOND, Museum d'Histoire Naturelle, Paris, France: Specimen of a plant, *Kalanchoe rosei*, from Madagascar (59530, exchange).

HAMILTON, Dr. ALLAN MCLANE, Great Barrington, Mass. (through Library of Congress, Washington, D. C.): Desk used by Alexander Hamilton (59850).

HAMMOND, E. H., Albuquerque, N. Mex.: 45 ethnological objects from the Philippine Islands, collected by the donor (58765).

HAMMOND, Prof. H. S. (See under Oregon Agricultural College.)

HAMPSHIRE, H., Jacksonville, Fla.: Rhinoceros beetle, *Strategus antæus* (58650).

HARDWOOD PRODUCTS Co., Neenah, Wis. (through Gum Lumber Manufacturers' Association): Sample red gum door (59844).

HARMER, Dr. H. B., Philadelphia, Pa.: Model of the breech mechanism of a double-barrel shotgun (59870).

HARRIMAN, Mrs. E. H., New York City: Oil portrait of Abraham Lincoln, by George H. Story, presented to the National Gallery of Art as a Lincoln's birthday gift (59431).

HARRIS, EDWARD D., New York City: 14 specimens, 10 species, of tiger beetles, Cicindelidæ, including cotypes of 2 species (59480).

HARRIS, Miss GRETCHEN D., Gallup, N. Mex. (through Bureau of American Ethnology): Indian vase from Arizona (59001).

HARRIS, Capt. J. R., Medical Corps, U. S. Army, Boston, Mass.: 19 Moro and other ethnological objects (59335).

HARRIS, Miss MARY G., Pittsburgh, Pa. (through Mr. William S. Sparks, Cumberland, Md.): Nest of a blue-gray gnatcatcher, *Polioptila cærulea*, from Maryland (59880).

HARRISON, Hon. CARTER H., Chicago, Ill.: 8 trout from the High Sierras (58907).

HARVARD UNIVERSITY, Cambridge, Mass.:

Arnold Arboretum (Jamaica Plain): 500 specimens of plants collected in China by Mr. E. H. Wilson (59442, purchase); 75 specimens of plants from the United States and Alaska (59447, exchange).

Museum of Comparative Zoölogy: 20 reptiles and batrachians from the West Indies, South America and elsewhere (58573, 59845). Exchange

HATCH, MARK BÜRCKLE (through Mrs. John Porter Hatch, Flushing, Long Island, N. Y.): Silver tray, pitcher, and 4 goblets, presented to Bvt. Maj. Gen. John Porter Hatch, U. S. Volunteers, in recognition of services during the War with Mexico, the Indian expeditions of 1857–1859, and the Civil War, sword presented to him in recognition of services during the Civil War, and uniform coat worn by him when lieutenant during the War with Mexico (59476).

HAWAII HARDWOOD Co., LTD., Pahoa, Hawaii: A specimen each of koa and ohia woods (59841).

HAY, Dr. O. P. (See under Strecker, John K.)

HAY, Dr. W. P., Washington, D. C.: 5 trematodes, *Hirudinella clavata*, from the gills and throat of a sail-fish taken at Beaufort, N. C. (58673).

HAYES, Col. WEBB C., Fremont, Ohio: White satin dress worn in the White House by Mrs. Rutherford B. Hayes, a lace handkerchief, and a framed photograph of Huntington's portrait of Mrs. Hayes now in the White House (59265, loan).

HAYNES, Miss CAROLINE C., Highlands, N. J.: Drawing of an hepatic, *Porella bolanderi* (59378).

HEATON, C. D., Rochester, N. Y.: Specimen of mineral, hewettite (58815, purchase).

HEIKES, VICTOR C. (See under MacVichie, Duncan; and Schwalenberg, L. G.)

HEITMULLER, ANTON, Washington, D.C.: 68 heating and illuminating devices and other anthropological material (59128); antique amber bead, German (59629). Exchange. (See under Lenman, Miss Isobel H.)

HELLER, A. A., Chico, Cal.: 34 specimens of plants from California (58870); 300 specimens of plants from California (58921, purchase).

HENDERSON, JOHN B., Washington, D. C.: About 3,000 marine invertebrates, collected by the donor off the coast of Florida (59126, 59947); 7,000 land and fresh-water shells, 5 fishes and 3 bird skins, collected in Cuba by Messrs. Henderson and Bartsch (59948). (See under Torre, Carlos de la.)

HENDERSON, Dr. JUAN, Matagalpa, Nicaragua: Lantern-fly, *Laternaria servillei* (59147).

HENDERSON, Judge JUNIUS, University of Colorado, Boulder, Colo.: 20 specimens, 9 species, of Philippine mollusks (58911).

HENKEL, Miss ALICE, Bureau of Plant Industry, Washington, D. C.: Specimen of a fern, *Asplenium ebenoides*, from the vicinity of Washington (58849).

HENRIKSEN, KAJ L., Copenhagen, Denmark (through Dr. A. G. Bøving, Washington, D. C.): Larvæ of 14 species

HENRIKSEN, KAJ L.—Continued.
of Danish click-beetles, Elateridæ (58686).

HENRY, J. K., Vancouver, British Columbia: 32 specimens of willows from British Columbia (59238).

HESS, FRANK L. (See under Haggott, Ernest A.; and Kozlowski, Roman.)

HEWETT, D. F., U. S. Geological Survey, Washington, D. C.: A stone maul and a chert blade from Wyoming, collected by the donor (58681).

HEYE, GEORGE G., Museum of the American Indian, New York City: 4 skeletons, with skulls, from the Nacoochee Mound, White County, Ga., collected by the donor (58773); collection of skeletal material from Tennessee (59348); plaster cast of a stone carving (Eskimo lamp), the original of which was found while excavating on the banks of the Kenai River, Alaska (59788).

HIBBARD, RAYMOND R., Buffalo, N. Y.: About 240 Devonian fossils from western New York (58627, 58795); slab of bryozoans from the Trenton limestone of New York (59765). Exchange.

HIGHSMITH, J. A., Takoma Park, D. C.: Young turkey vulture, *Cathartes aura septentrionalis*, from Takoma Park (59888).

HILL, Mrs. C. (See under Thompson, Mrs. Burton.)

HILLERS, J. K., Washington, D. C.: 10 transparencies of Yellowstone National Park views (59923, purchase).

HILTON, Dr. WILLIAM A., Pomona College, Claremont, Cal.: About 65 crustaceans collected at Laguna Beach, Cal. (59379). (See under Pomona College.)

HINKLEY, A. A., Du Bois, Ill.: 228 specimens, 12 species, of land shells from Du Bois (59255).

HIRASE, Y., Okazaki, Kyoto, Japan: 40 specimens, 21 species, of mollusks from Japan (59085).

HISER, ANTHONY, Hyattsville, Md.: Dragonfly from Hyattsville (58693).

HITCHCOCK, Prof. A. S., Bureau of Plant Industry, Washington, D. C.: Specimen of violet from Maryland (59717).

HOEHNE, F. C., Museu Nacional, Rio de Janeiro, Brazil: Specimen of a cactus, *Pereskia* (58922).

HOES, GOUVERNEUR and LAURENCE GOUVERNEUR, Washington, D. C.: 3 waistcoats worn by President James Monroe and 2 dresses worn by Mrs. Monroe (59452, loan).

HOES, Mrs. R. G., Washington, D. C.: Pair of child's red shoes with pointed toes, white kid slipper of 1672, pair of Colonial slippers, a handkerchief of lace and 1 of drawn work, 2 pieces of white knit lace, pair of lace cuffs, a collection of 12 pieces of lace, and an olive-wood card case (58601); an infant's dress of white linen lawn and 1 of white lawn (58607); a framed map of the world, embroidered and painted on silk in 1813 by Christina M. C. Cantine (58646); 2 books owned by President James Monroe, 3 leather wallets and 3 samplers, early 19th century, a framed photograph of Barbara Freitchie, 3 copperplates, and a doll's teaset and jug of papier-mâché (58656); 2 compotiers and 6 plates, used by President Monroe and now owned by Mr. Grafton Spurrier (58846); a comb which belonged to Mrs. James Monroe (59025); collection of weapons and war objects, and other anthropological material (59073); 2 lilac brocaded silk dresses worn by Mrs. John Hay when her husband was Secretary of State, 1898–1905 (59836). Loan. (See under Cumming, Mrs. Gordon; Gouverneur, Miss Maude Campbell; and Lower, Mrs. Mary Norton.)

HOGLUND, Mrs. M., Falconer, N. Y.: Abnormal egg of a domestic fowl (59529).

HOLCOMB, BENTON, Simsbury, Conn.: 19 specimens, 3 species, of fresh-water mollusks from Connecticut (59326).

HOLLISTER, N., U. S. National Museum: Henslow's bunting, *Passerherbulus henslowi*, from Wisconsin (59004).

HOLM, Dr. THEODOR, Brookland, D. C.: Specimen of a sedge, *Carex*, from Maryland (58611); 4 specimens of ferns from Porto Rico (58729); 8 specimens of ferns from the United States (59160).

HOLMES, WILLIAM H., U. S. National Museum: Earthenware vase from Oaxaca (?), Mexico, collected by Eugene Boban in 1886 (59783).

HOLWAY, Prof. E. W. D., University of Minnesota, Minneapolis, Minn.: 61 specimens of parasitic fungi, chiefly from Guatemala and Jamaica (58860, exchange); 163 specimens of Central American plants (59622).

HOLZ, LEO L., Los Angeles, Cal.: Spider, *Peucetia viridans* (58749).

HOMER COMMUTATOR Co., Cleveland, Ohio (through Mr. F. P. Wilds, Keene Mica Products Company, New York City): Motor commutator, halved to show mica insulation (59434).

HOOVER, S. C., Takoma Park, D. C.: 4 daguerreotypes, 3 tintypes and 10 ambrotypes (58555).

HOPKINS, L. S., Kent, Ohio: 5 specimens of ferns (59026).

HOUGH, Dr. WALTER, U. S. National Museum: 3 bronze 5 centavo pieces of the State of Chihuahua, Mexico, issued in 1915 by the Constitutionalist Army under the direction of Francisco Villa (59429); a flint arrowpoint and a fossil horse-tooth, collected by Mr. P. C. Bicknell in the Grand Canyon, 20 miles south of Bright Angel trail, Coconino County, Ariz. (59590).

HOUSE, Dr. H. D., Albany, N. Y.: 90 specimens of plants, *Sphagnum*, collected in North Carolina and Michigan (59000). (See under New York State Museum.)

HOUSTON, H. I., Washington, D. C.: Double-barrel shotgun made by Parker Bros., Meriden, Conn. (58580).

HOWELL'S MICROCOSM, Washington, D. C.: Relief map of Yellowstone National Park, colored to show geology (59899, purchase).

HOWLAND, Mrs. JOHN C., Washington, D. C.: Greek testament (59090).

HRDLIČKA, Dr. ALEŠ, U. S. National Museum: Mole, *Scalopus*, from the District of Columbia (59139).

HUCKABAY, DE WITT, Rector, Ark.: Large chipped blade, mound builder's hoe (59776, purchase).

HUSTON, M. B., Philadelphia, Pa.: Small poisoned arrow used by the natives at the headwaters of the Atrato River, Colombia, South America, and 4 frogs from which the poison is taken (59143).

HYDE, FREDERIC BULKELEY, Washington, D. C.: Insect, *Phragmatobia assimilans* (58684); mouse, *Zapus hudsonicus hudsonicus*, from Maine (58779); 2 cocoa fiber garments from Samoa (59689).

IDDINGS, Prof. JOSEPH P., Washington, D. C.: 2 obsidianites from Borneo and a specimen of Darwin glass from Loftus Hills, Tasmania (59136); 8 specimens of phosphate rock from Ocean and Makatea Islands, and a boulder of diatomaceous earth from Uahuka (59546).

IIDA, Prof. Y., Kagoshima, Japan: 12 specimens of volcanic material from Japan (59123, purchase).

ILES, GEORGE, New York City (through Prof. F. W. Clarke): Silver medal designed by Georges Lemaire in 1910, commemorating the Franco-Prussian War of 1870–1871 (59075).

INDIANA UNIVERSITY, Bloomington, Ind.: Collection of fishes from Colombia and Ecuador (59572, exchange).

INGERSON, CHARLES FRANK, Superintendent, Arts & Crafts Section, Panama-Pacific International Exposition, San Francisco, Cal.: 24 specimens of art pottery, made by Newcomb Pottery, New Orleans, La.; Bertha Heise, South Pasadena, Cal.; Paul Revere Pottery, Boston, Mass.; C. R. Thomas, The Tile Shop, Berkeley, Cal.; and Adelaide Alsop Robineau, New York (59606, purchase).

INTERIOR, DEPARTMENT OF:

Incomplete skeleton of a child, together with a bowl and some shell beads discovered by Mr. Spellmeyer near a ruin west of Cibecue Creek, Apache Reservation, Ariz., and received through Mr. W. M. Peterson, superintendent of Fort Apache Indian School (59163); 6 buffalo skulls and 3 scalps, 30 coyote skulls and 24 skins, 3 wolf skulls and a grizzly bear skull, received from Yellowstone National Park (58538, 59416, 59725).

INTERIOR, DEPARTMENT OF—Continued.

U. S. Geological Survey: Pink beryl gem from Mount Apatite, Auburn, Me., received from Mr. N. G. Smith and Mr. M. L. Keith (58596); collection of phosphate rocks, etc., from Florida and southern Georgia, made largely by Mr. G. H. Eldridge, and corundum and associated materials from North Carolina (58678); 14 boxes of geologic specimens collected by Dr. T. Nelson Dale, illustrating various topographic sheets in the Taconic region (58794); about 300 minerals, chiefly from California (58863); 4 specimens of gastroliths collected by Mr. D. F. Hewett from the Morrison formation, Wyo. (58895); a series of iron ores and related rocks, illustrating a report on the Hartville iron-ore range, Wyo., by Mr. S. H. Ball, published in Survey Bulletin 315 (58945); 2 specimens of calcite with included fibers of marcasite, and a geode lined with calcite and pyrite crystals (59021); specimen of peridotite collected by Mr. Joseph Ward near Bagdad, Cal. (59051); 3 teeth and jaw fragments of the fossil mammal *Coryphodon*, collected by Mr. Ralph W. Howell from the Eocene near Pumpkin Buttes, Powder River Basin, Wyo. (59095); mass of crystallized fluorspar from the Lead and Fluorspar mines, Rosiclare, Ill., received from Mr. E. F. Burchard (59096); 2 small collections of Eocene fishes obtained by Mr. Dean E. Winchester from the Green River formation in southern Wyoming and northeastern Utah (59097); 18 small lots of vertebrate fossils, chiefly Miocene, obtained by Mr. Arthur J. Collier in the northeast Montana lignite field (59098); 58 Upper Cretaceous corals described by Dr. L. W. Stephenson (59137); 11 thin sections of Richmond, Va., granites reported on by Mr. E. S. Bastin in Survey Bulletin 483, and 8 from rocks described in Survey Folio 150 (59173); small collection of fossil camel bones obtained by Mr. Edwin S. Giles near Goldfield, Nev. (59180); 10 current meters (59263); about 1,019 lots and over 3,000 species of Tertiary invertebrate fossils from the Atlantic and Gulf coastal plain of the United

INTERIOR, DEPARTMENT OF—Continued. States (59277); 3 collections of Devonian invertebrates, including about 500 specimens representing 150 species, studied and described by Dr. E. M. Kindle in Bulletin of American Paleontology, Vol. 4, and Survey Bulletins 391 and 508 (59318); 350 Niagaran fossils from Indiana, including 190 type and figured specimens described by Dr. Kindle and Mr. C. L. Breger in the 28th Annual Report of the Department of Geology and Natural Resources of Indiana (59596); specimens from the nitrate deposits in southern Idaho and eastern Oregon, collected by Mr. G. R. Mansfield and described in Survey Bulletin 620–B (59432); specimens representative of the geology and ore deposits of the Helena mining region, Mont., described by Dr. A. Knopf in Survey Bulletin 527 (59520); model of deep placer mining in frozen ground, a relief map of Alaska, and a bridge model showing Alaska transportation, exhibited at the Panama-PacificInternational Exposition, 1915 (59588); rock specimens from the Apishapa quadrangle, Colo., representing the Cretaceous sedimentary rocks described by Mr. G. W. Stose in Survey Folio 186 (59631); ores of Alaska and coal samples of the United States, exhibited at the Panama-Pacific International Exposition, 1915 (59659); 11 specimens of nepheline syenite and associated rocks from near Brookville, N. J., with thin sections, described by Mr. F. L. Ransome in American Journal of Science, Volume 8 (59713); 3 small lots of reptilian fossils from the Judith River formation and 1 lot of recent or Pleistocene mammal bones, collected by Mr. Eugene Stebinger in the Milk River region, northern Montana (59723); approximately 100 fossil plants from the Fox Hills formation of the Greeley quadrangle, Colo., obtained by Dr. T. W. Stanton and Mr. T. E. Williard in 1914 and 1915, including the types and figured specimens described by Dr. F. H. Knowlton in Professional Paper 98–H (59893); collection of late Cretaceous plants, invertebrates, and vertebrates, obtained by Mr. C. M. Bauer in the San Juan Basin, northwestern New Mexico, including the types and figured specimens described by Dr. Knowlton, Dr. Stanton and Mr. C. W. Gilmore in a forthcoming Professional Paper of the Survey, and containing about 40 forms (200 specimens) of plants, 30 forms (1,000 specimens) of invertebrates, and 9 forms (30 specimens) of vertebrates (59894); 20-pound bar of antimony, made by the Chapman Smelting Company, San Francisco, Cal. (59929).

INTERNATIONAL GLASS CO., THE, Millville, N. J.: 30 miniature lamp chimneys (59883, purchase).

JACKSON, Miss FANNIE (through Mrs. Julian-James): Silk patchwork quilt made by Mrs. Thomas R. Jackson (Charlotte B. M. Jackson) in 1900 (59266, loan).

JACOBS, MICHEL, Washington, D. C.: Plaster medallion bas-relief portrait casts of Susan B. Anthony and William Jennings Bryan, made by the donor (59074).

JACOBS, WILLIAM L., & SON, Oglala, S. Dak.: Portion of the skull of a fossil mammal, *Entelodon imperator* (59739).

JAHN, Dr. ALFREDO, Caracas, Venezuela: 63 specimens of plants from Venezuela (58891, 59437). Purchase.

JAMES, Mrs. JULIAN-, Washington, D. C.: Small, framed half-tone picture of a statue of Thomas Jefferson, at the University of Virginia, the original of which was designed by Carl Bitter (58599); hexagonal tile bearing a bas-relief portrait of President Lincoln (58655, loan); black beaver hat of the style of 1800 and a black beaver stovepipe hat worn about 1850 (58845); doll's chair and trunk (58917, loan); pair of black satin button shoes with red silk lining (59120, loan); open, gold-faced, gold watch, with gold chain and seal (59391, loan); embroidered map of the State of New York (59802, loan); black silk and satin checked dress worn by Mrs. James' mother, Mrs. Theodorus Bailey Myers (59875, loan); purple velvet skirt and 2 waists, elaborately

JAMES, MRS. JULIAN.—Continued.
corded with white silk, a purple silk parasol and a purple silk fan with ivory sticks, owned by Mrs. Abraham Lincoln (59902, loan); engrossed copy of the appointment of Sidney Mason as consul at St. Johns, P. R., dated September 8, 1829 (59903, loan). (See under Clement, Mrs. Erskine; Crane, Mrs. W. Murray; Jackson, Miss Fannie; Mason, Mrs. Sidney; and Zimmerman, Mrs. J. E.)

JANOWSKI, M., Roxbury, Mass.: 2 Turkish bronze coins, 40-para pieces, issued in 1860 (59525).

JAPAN. HIS IMPERIAL JAPANESE MAJESTY'S COMMISSION TO THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION, 1915, San Francisco, Cal. (through Mr. H. Yamawaki, commissioner general): Miscellaneous collection of exhibits from the Japanese Section at the Exposition (59674).

JAPAN EXPOSITION SOCIETY, PANAMA-PACIFIC INTERNATIONAL EXPOSITION, 1915, San Francisco, Cal.: 2 specimens of cut velvet work, "Yuzen Birodo," illustrating steps in the Yuzen process of dyeing (59281); a pearl shell containing a culture pearl, 6 samples of cotton, silk, and mixed fabrics, 9 samples of wood splints, chip braids and chip mattings, and 10 specimens of long, green timber bamboos (59283, purchase).

JEPSON, MRS. VINNIE, Kanab, Utah: Earthenware jar from Utah, collected by the donor (58740).

JOAN OF ARC STATUE COMMITTEE, New York City (through Dr. George F. Kunz, president): Piece of the stone taken from the dungeon at Rouen where Joan of Arc was imprisoned, and a bronze medal struck from the special die commemorating the erection of the Joan of Arc statue, designed by Miss Anna Vaughn Hyatt and unveiled at Riverside Drive and 93rd Street, New York City, on December 6, 1915 (59181).

JOHNSON, COWDIN & CO., New York City: Sample of silk grosgrain ribbon—design, "State Flower Bouquet," with original draft of design and diagram of the flowers represented (58867).

JOHNSON, COWDIN & CO.—Continued.

JOHNSON, FRANK R., Weyers Cave, Va.: Leaf-shaped blade and 40 arrowpoints and spearheads, found 3 miles east of Weyers Cave (59183).

JOHNSON, HARRY L., South Meriden, Conn.: 18 Japanese beetles (58938).

JOHNSON, RALPH CROSS, Washington, D. C.: 25 oil paintings (59871, loan).

JOHNSON, TOM B., San Antonio, Tex.: 8 specimens of the introduced European agate snail, *Rumina decollata*, from San Antonio (59417).

JOHNSTON, E. C., Bureau of Fisheries, Washington, D. C.: 15 mollusks, *Lymnæa columella macrostoma*, from Chevy Chase Lake, Md. (59193).

JOHNSTON, EARL LYND, Fort Lupton, Colo.: 16 specimens of plants from Colorado (59194).

JOHNSTON, Dr. J. R., Santiago de las Vegas, Cuba: 7 living specimens of Cactaceæ from Cuba (59636).

JOHNSTON, Maj. W. T., U. S. Army, Washington, D. C.: Collection of Filipino weapons and a polo stick (59886).

JONES, DAVID P., U. S. National Museum: Canadian silver quarter-dollar issued in 1911 (59953).

JONES, HOWARD, Mexico, Mexico (through Mr. James C. Flournoy, Washington, D. C.): 2 antique Spanish swords (59945, loan).

JONES, MARCUS E., Salt Lake City, Utah: 2 living specimens of a cactus, *Mamillaria*, from Utah (58540); 3 specimens of plants, *Chrysothamnus*, from Utah and Nevada (58665, exchange); fragment of the type of a plant, *Acleisanthes nummularia* (59515).

JORDAN, FRANK. (See under Gant, William M.)

JORGENSEN, PEDRO, Andalgalá, Argentina: 124 specimens of plants from Argentina (59248, purchase).

JOYNER, F. M., Lake Weir, Fla.: Turtle, *Clemmys guttata*, from Florida (58546).

JUDD, NEIL M., U. S. National Museum: 178 arrowpoints, stone pendants, etc.,

JUDD, NEIL M.—Continued.
and a Navaho comb, collected by the donor in Utah, Arizona, and New Mexico, during the years 1907–1910 (58716).

KANSAS, MUSEUM OF UNIVERSITY OF, Lawrence, Kans.: 18 lizards from Kansas (59587).

KEARNEY, T. H. (See under Maxon, William R.)

KEFFER, WILLIAM, Philadelphia, Pa.: 13 specimens showing the steps in the manufacture of a tobacco pipe from western red gum (59798).

KELLERS, H. C., U. S. Navy, Honolulu, Hawaii: Amphibians and reptiles from California (58839, 59603).

KELSEY, Mrs. ALBERT WARREN, Philadelphia, Pa.: China teapot and waste bowl, used before 1853 at Mineral Point, Wis., by Jeanette Garr Washburn (59184); a work entitled "Some notes on the Evesham branch of the Washbourne family," by E. A. B. Barnard, F. S. A. (59219).

KELSEY, Prof. F. W., San Diego Commercial College, San Diego, Cal.: 79 land and fresh-water shells from San Diego County (58879); 43 mollusks, *Epiphragmophora stearnsiana*, from Pacific Beach, Cal. (58986).

KEW, ENGLAND, ROYAL BOTANIC GARDENS: Specimen of a fern, *Notholæna cinnamomea*, from Guatemala (58585); 41 specimens of plants from eastern Africa (59680); fragment of the type of a plant, *Lonchocarpus obovatus* (59811). Exchange.

KEYSER, E. W., Washington, D. C.: 8 Etruscan antiquities (58828, 58900); Yankton Sioux headdress, and a pianeta (chasuble) of yellow brocade, Italian, 16th century (58874, exchange); obsidian core and spearhead, from Mexico (59056); 5 wood carvings and a clay pipe of the Igorot, and a crescentric brass box of the Moro (59557, exchange).

KING, Lieut. RUFUS, U. S. Navy, Washington, D. C.: A gold-mounted and jeweled sword with scabbard, presented by the 19th Regiment, Indiana Volunteers, in 1862, to Brig. Gen. Rufus King, U. S. Volunteers, and a rapier with scabbard owned by him prior to the Civil War (59654, loan).

KIRK, Dr. EDWIN, U. S. Geological Survey, Washington, D. C.: 100 mollusks, *Cincinnatia cincinnatiensis*, collected near Big Pine, Lake Beds, Owens Valley, Cal. (59471).

KITE, Miss REBECCA, Jamaica Plain, Mass., and Miss MARY J. RATHBUN, Washington, D. C.: 4 snakes, 4 toads, 3 mice, 2 shrews, larva of a sphingid moth, larvæ of a sawfly, and 19 specimens of mosses and lichens, collected in New Hampshire (58621, 58642, 58722, 58755, 58878).

KLEIN, EUGENE, Philadelphia, Pa.: 11 charity war stamps (59069).

KLETTZ, A. B. and E. F., Salisbury, N. C.: Specimen of quartz with native gold, from near Concord, N. C. (59249).

KLOSS, C. BODEN, Selangor Museum, Kuala Lumpur, Federated Malay States, and Dr. WILLIAM L. ABBOTT: 197 mammals, 133 birds and 98 reptiles, from southeast Siam (59599).

KNAB, FREDERICK, Bureau of Entomology, Washington, D. C.: About 125 Diptera of the family Syrphidæ, from the vicinity of Washington, and 140 flies, tabanids, from the same region (59492).

KOCH, WALTER E., Terlingua, Tex.: Bat, *Antrozous pallidus*, from Texas (58613).

KOTRBA, FRANK J., U. S. National Museum: 3 eggs of a black-billed cuckoo, *Coccyzus erythropthalmus*, from Washington, D. C. (59380).

KOZLOWSKI, Dr. ROMAN, Escuela Nacional de Mineria, Oruro, Bolivia (through Mr. Frank L. Hess, Washington, D. C.): Small collection of tin ores and associations, from Bolivia (58713).

KRAUSE, WILL H., Bainbridge, Ga.: Fossil shell, *Cassidulus subquadratus*, from Bainbridge (58674).

KREMER, Rev. ELLIS N., Harrisburg, Pa.: 14 stone implements found near Harrisburg (59425).

KRYGER, J. P., Gjentofte, Denmark (through Dr. A. G. Bøving, Washington, D. C.): 26 vials of Hymenoptera, including a paratype of *Cephalobaris eskelindi*, and 21 vials of Diptera (59547).

KUHNS, D. B., Honolulu, Hawaii (through Mr. Wilhelm Busck, Washington, D. C.): 38 species of mollusks, Achatinellidæ, from the Hawaiian Islands (59009).

KUNZ, Dr. GEORGE F. (See under Avery, Samuel Putnam, Medal Committee; Joan of Arc Statue Committee; and New York City, Citizen's Committee.)

KUNZÉ, Dr. RICHARD E., Phoenix, Ariz.: 2 butterflies representing 1 of each sex of *Anthocharis pima*, from Arizona (59500).

KURSHEEDT MANUFACTURING CO., THE, New York City: 3 original embroidery designs, 2 enlarged designs for a hand-operated Schiffli machine, punched paper pattern for embroidery automat, 6 needle-nippers for Saurer power machine, auto parts to control Groebli jacquard, and 10 samples of machine-embroidered voiles (59122).

LAMB, Dr. D. S., Army Medical Museum, Washington, D. C.: 2 anatomical specimens (58837, 59849).

LANDON, E., Washington, D. C.: Sample of pyrophyllite from Waterford, Va. (59278).

LANGDON, Miss HARRIET N., Cincinnati, Ohio: 53 coins of the United States, England, France, Spain and Mexico, and a United States token (59102).

LANGWORTHY, Dr. CHARLES F. (See under Thompson, Mrs. Burton.)

LAPOUGE, G. DE, Poitiers, France (through Dr. A. G. Bøving, Washington, D. C.): Larvæ of Coleoptera, including 21 forms (59502, exchange).

LATHROP, Miss M. S., Lebanon, N. H.: Gold locket worn by Miss Abigail Fillmore, daughter of President Millard Fillmore (59702).

LAWTON, Miss CATHERINE, Washington, D. C.: Glass punch set of 15 pieces owned by Maj. Gen. Henry W. Lawton, U. S. Volunteers, father of the donor (59650).

LAWTON, MANLEY, Washington, D. C.: Gold watch and chain presented by the cattlemen of central New Mexico to the donor's father, Maj. Gen. Henry W. Lawton, U. S. Volunteers, in 1886, when Captain, 4th U. S. Cavalry in recognition of his services in connection with the capture of the Apache Indian chief, Geronimo (59641); bronze Medal of Honor awarded by Congress to Gen. Lawton when Lieutenant Colonel and Inspector General, United States Army, for distinguished gallantry in battle at Atlanta, Ga., August 3, 1864, and an ivory memorandum pad used by Gen. Lawton during the Civil War (59731).

LAWTON, MANLEY—Continued.

LAWTON, Mrs. MARY C., Washington, D. C.: Collection of relics of Maj. Gen. Henry W. Lawton, U. S. Volunteers, husband of the donor (59545).

LAYTON, Miss FLORENCE W., Washington, D. C.: 9 specimens of plants from Virginia (59307).

LEA, ARTHUR M., Adelaide, Australia: About 1,900 named specimens, representing 958 species, of Coleoptera (purchase and gift) (59857).

LEDERLE ANTITOXIN LABORATORIES, Pearl River, N. Y.: A series of typical packages of manufactured biological products, including antitoxins, serums and vaccines (59571).

LEE, Miss MARY CUSTIS, Jamestown, N. Y.: 2 oil paintings—John Custis, the 3rd, age 48, painted in 1725, and Frances Parke Custis, age 14 (58728, loan).

LENMAN, Miss ISOBEL H., Washington, D. C. (through Mr. Anton Heitmuller): 35 specimens of antique iridescent glassware from Italy and Syria (59873, loan).

LEÓN, Brother, Colegio de la Salle, Havana, Cuba: Specimen of a plant, *Gossypianthus*, from Cuba (59364).

LEWIS, Mrs. SPENCER, Pekin, China (through Mr. John C. Ferguson, Newton, Mass.): 62 specimens of marine algæ from China (59885).

LEWIS, WALTER P., Phillipsburg, N. J.: Indian skull found by the donor in a grave on the old village site at Martins

LEWIS, WALTER P.—Continued.
Creek, Northampton County, Pa., and 4 skulls and some bones from graves in the same locality (58802, 58902).

LIEBES, H., & Co., San Francisco, Cal.: 8 specimens of mink skins, showing the method of cutting, sewing and forming furs for articles of wear (59313).

LILLY, ELI, & Co., Indianapolis, Ind.: 28 boxes of empty gelatin capsules of various colors in 11 sizes, and 6 pieces of sheet gelatin (59961).

LITTLE, LESTER F., Kanab, Utah: Grooved stone maul from Johnson Canyon, Utah, and a yucca-and-bark sandal and horn spatula from a cave in Kanab Canyon, Utah, collected by the donor (58739).

LONG, The Misses, Washington, D. C.: Black satin "dickey," hand-made, period of 1830, French embroidered "dickey," period of 1830, and a quaint day-cap worn in Salem, Mass., during the early part of the 19th century (58645); deringer pistol and a flint-lock, muzzle-loading shotgun (58748); 3 pieces of furniture, 4 bronzes and 2 medallions, of the Georgian period (59186). Loan.

LOOMIS, H. F., Lanham, Md.: Turtle, *Kinosternon pennsylvanicum*, from Lanham (58782); larvæ of 12 species of beetles from Mertensia, N. Y., and Jackson, Tenn. (59489).

LOOMIS, Miss MARTHA L., Sherborn, Mass.: 32 specimens of plants from Massachusetts (58788, 58924, 59913).

LOUISIANA PURCHASE EXPOSITION. (See under Philippine Commission.)

LOUISVILLE VENEER MILLS, Louisville, Ky., and the GUM LUMBER MANUFACTURERS' ASSOCIATION, Memphis, Tenn.: Finished panel of quarter-sawed red gum veneer, figured wood, matched for design (59878).

LOWER, Mrs. MARY NORTON, Washington, D. C. (through Mrs. R. G. Hoes): Dolls, wearing apparel and a fan, of the latter part of the 18th and the early part of the 19th century (59454, loan).

LÜDERWALDT, HERMAN, Museu Paulista, São Paulo, Brazil: 50 specimens of ferns from Brazil (59474, purchase).

LUNELL, Dr. J., Leeds, N. Dak.: 11 specimens of plants, *Chenopodium*, from North Dakota (59045, exchange).

LYON, Dr. M. W., jr., Washington, D. C.: Bat, *Lasionycteris noctivagans*, from Great Falls, Md. (59667).

MAAG, EDWARD, New York City: 24 samples of upholstery and drapery trimmings manufactured in America, and 2 photographs showing the method of weaving and dyeing trimmings (58980).

MCATEE, W. L., Bureau of Biological Survey, Washington, D. C.: 98 specimens of plants from Virginia, Maryland, the District of Columbia and vicinity (58559, 58649, 58719, 58807, 59444); 4 crabs, *Uca pugilator*, from Revels Island, Va. (59221); 2 lots of crabs from Cocoanut Grove, Fla. (59389).

MACBETH-EVANS GLASS CO., Pittsburgh, Pa.: Miscellaneous glass articles and photographs (58571); photograph—a general view of Macbeth-Evans glass works at Charleroi, Pa. (58791).

MCCULLOCH, Miss IRENE, University of California, Berkeley, Cal.: Cotype of the protozoan *Crithidia leptocoridis*, from the box elder bug, *Leptocoris trivittatus*, from Lawrence, Kans. (59291).

MCDONALD, A. W., Hot Wells, Tex.: Large fluorite crystal (58618).

MACDONALD, D. F., U. S. Geological Survey, Washington, D. C.: Specimen of fossil wood from Panama (59864).

MACDONALD, F. L. W. (See under Netherlands and Colonies, Central Commission of the, Panama-Pacific International Exposition.)

MACDONALD, Mrs. MARSHALL, Alexandria, Va.: Percussion cap-lock pistol made by T. Ketland & Co. (59338, loan).

MCKEE, Mrs. J. R., New York City: Costume consisting of a brocade satin, silk-and-velvet gown, fan, white kid gloves, gilded-kid button boots and Brussels point lace handkerchief, worn by Mrs. McKee at the inaugural ball of her father, President Benjamin Harrison, March 4, 1889 (58821, loan).

MACKIE, D. B., Washington, D. C.: Skull of tamarao, *Bubalus mindorensis* (58539, exchange).

MCKINNEY, J. R., Nacogdoches, Tex.: Hellgramite, *Corydalis cornuta* (58583).

MCKNIGHT, GEORGE J., Washington, D. C.: 4 specimens of gold ore from Clear Creek County, Colo. (59356).

MCLANE, Mrs. ALLAN, Washington, D. C.: 122 ethnological objects, art objects, souvenirs, etc., from various parts of the world—additions to "The Allan McLane Collection" (59401, 59822, loan); collection of dolls and dolls' apparel (59473).

MCMAHON MUSEUM, Quetta, Baluchistan, India: 25 skins and 24 skulls of mammals from Baluchistan (58775, exchange).

MCMULLIN, D. J., Pago Pago, Samoa: 10 specimens of ferns from American Samoa (58780).

MACVICHIE, Capt. DUNCAN, Salt Lake City, Utah (through Mr. Victor C. Heikes): A crystal and an ore specimen of scheelite from near Osceola Nev. (59131).

MAHONEY, J., New Denver, British Columbia, Canada: Jumping mouse, *Zapus* (59054).

MAHONEY, Mrs. JOHN, Indian Head, Md.: 2 Indian baskets (59874, loan).

MALAYA BOARD, INTERNATIONAL HEALTH COMMISSION (through Dr. Samuel T. Darling, chairman, Kuala Lumpur, Federated Malay States): Young fish, *Barbus maculatus* (59479).

MALLINSON, H. R., AND CO., New York City: 7 samples of Pussy Willow taffeta, "State flower design" (58952).

MALNATI, Miss VIRGINIA, Washington, D. C.: Specimen of a plant, *Pentstemon*, from Maryland (58545).

MANCHESTER MUSEUM, UNIVERSITY OF MANCHESTER, Manchester, England: Gorgonian, *Actinoptilum molle*, from the Cape of Good Hope (58643, exchange).

MANCHESTER, JOHN G., New York City: 13 minerals from New York and New Jersey (59697, exchange).

MANNING, J. F., Marble, Colo.: Crystals of twinned calcite and of pyrite in marble (58958).

MANNING, L. T., Myrtle, Miss.: 4 moths, *Catocala* (58973).

MANSFIELD, W. C., Washington, D. C.: 90 specimens, representing 15 species, of land and fresh-water shells from the coastal plain of Florida, Alabama, and Georgia (58615).

MANTZ, CYRUS, jr., Washington, D. C.: Bronze medal commemorating the inauguration, March 4, 1909, of William Howard Taft, as President of the United States (59460).

MARSH, Mrs. FREDERICK, Washington, D. C.: Old Spanish lace scarf made in Salamanca, Spain (59812, loan).

MARSHALL, ERNEST B., Laurel, Md.: Cooper's hawk, *Accipiter cooperi* (58953); skull of raccoon, *Procyon* (59094).

MARSHALL, GEORGE, U. S. National Museum: Skull of a "Boston bull," *Canis familiaris* (59262); skull of a gray fox (59575); young robin, *Planesticus migratorius*, from Washington, D. C. (59749).

MARSHALL, JOHN E., Clifton, Va.: Grooved stone ax found near Clifton (59789).

MARTIN, GEORGE C., Asbury Park, N. J.: 8 fossils and 3 concretions (58997).

MARTIN, Miss JANET, Worcester, Mass.: 44 ceramics, embroideries, etc. (59118).

MARYLAND GEOLOGICAL SURVEY, Baltimore, Md. (through Dr. L. W. Stephenson, Washington, D. C.): 18 Upper Cretaceous corals from Maryland, including types (59132, deposit).

MASON, Mrs. ALPHONSO, Philadelphia, Pa.: A baby's white dress with 2 gold armlets, and an Italian embroidered black net shawl (59630, loan).

MASON, FRANK R., Philadelphia, Pa.: 21 beetles (58778, exchange).

MASON, Mrs. SIDNEY, Philadelphia, Pa. (through Mrs. Julian-James): A child's pink dimity dress and a pair of handmade slippers (59747, loan).

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Boston, Mass.: 66 minerals and ores (59746, exchange).

MAXON, WILLIAM R., U. S. National Museum: 650 specimens of plants, *Sphagnum*, from New York and Maryland (58960, 59012); 50 specimens of *Sphagnum* from New York and Maryland, collected by Mr. E. L. Morris (58992); 4 specimens of violets from New York (59585).

MAXON, WILLIAM R., and T. H. KEARNEY, Bureau of Plant Industry, Washington, D. C.: 60 specimens of plants from Maryland (59744).

MAXON, WILLIAM R., and J. B. NORTON, Bureau of Plant Industry, Washington, D. C.: 35 specimens of plants from Maryland (58594).

MAXWELL, J. J., Washington, D. C.: Seahorse, *Hippocampus hudsonius*, from the Potomac River about 4 miles north of Colonial Beach (58909).

MAYER, Dr. A. G., Princeton, N. J.: 34 fossil corals from Tobago Island (59741).

MAYER, CASPER, Humbird, Wis.: Eyed click beetle, *Alaus oculatus*, and small longhorned beetle, *Liopus variegatus* (58675).

MAYNARD, CHARLES W., Detroit, Mich.: Collection of Civil War relics (59852).

MEARNS, Lieut. Col. EDGAR A., U. S. Army (retired), U. S. National Museum: Rhinoceros-hide whip, used to keep order among the bearers in Col. Roosevelt's East African *safari* (58882); woman's beaded apron, from West Africa (58883, loan).

MEARNS, Miss LILLIAN H., Washington, D. C.: A land and a marine mollusk from Virginia (59212).

MEINZER, O. E., U. S. Geological Survey, Washington, D. C. (through Dr. T. Wayland Vaughan): 71 lots of lithologic specimens and fossils from the vicinity of Guantanamo, Cuba, collected in 1915 (59383).

MELBOURNE, VICTORIA, AUSTRALIA, NATIONAL MUSEUM: 10 lots of Tertiary bryozoans from Australia (59518).

MELLA, FRITZ, Santiago, Chile: 4 minerals from Chile (59623).

MERRIAM, Dr. C. HART, Washington, D. C.: Smoke-dried head of a Brazilian Indian, obtained in 1875 on the headwaters of the Tapajos River, by Mr. Ernest T. Morris (59457).

MERRILL, Dr. GEORGE P., U. S. National Museum: Specimen of fern, *Filix fragilis*, from Colorado (58776); 3 concretions of clay-iron-stone out of Hamilton "Bluestone," Kingston, N. Y. (58873); 20 specimens of serpentinous marbles from the head of Yule Creek, Gunnison County, Colo. (58875).

MERRILL, Mrs. GEORGE P., Washington, D. C.: Jet bracelet (58827, loan).

MERRILL, G. K., Rockland, Me.: 70 specimens of lichens and algae mainly from New England (58708, exchange).

METCALF, Dr. MAYNARD M., Oberlin, Ohio: 40 tunicates belonging to the genera *Pyrosoma*, *Salpa* and *Fritillaria* (59048); 4 specimens of *Salpa*, consisting of 3 specimens of *Cyclosalpa bakeri* from La Jolla, Cal., and 1 of *C. virgula*, from the Naples Zoological Station (59753).

MICHIGAN, UNIVERSITY OF, Ann Arbor, Mich.: 2 land crabs from Colombia and British Guiana, each the type of a new species (59393).

MILLER, GERRIT S., jr., U. S. National Museum: Weasel, *Mustela noveboracensis*, 2 rabbits, *Sylvilagus*, and a bat, *Nycteris borealis*, all from Virginia (58536, 58614, 58626, 58671).

MILLER, Miss MARY F., Washington, D. C.: 2 specimens of plants, *Antennaria*, from Virginia (59752).

MILLS, WILLIAM C., Ohio State University Museum, Columbus, Ohio: Plaster cast of effigy pipe, the Indian dog (59761).

MIMS, J. C. (See under Forest Products Co.)

MINNESOTA ACADEMY OF SCIENCES, Minneapolis, Minn.: 25 silver tetradrachms issued during the second and first centuries, B. C., by the Egyptian kings Ptolemy X and Ptolemy XIII (59032, exchange).

MIRGUET, JEROME E., Rochester, N. Y.: 8 restorations of dinosaurs, modeled by Mr. C. W. Gilmore (59863, purchase).

MISSOURI BOTANICAL GARDEN, St. Louis, Mo.: Photograph of the type specimen of a plant, *Senecio hypotrichus* (59347, exchange).

MITTNER, Miss M. L., Pilkinton, Va.: Rhinoceros beetle, *Dynastes tityus* (59519).

MIXTER, GEORGE. (See under Guirola, Rafael.)

MOFFETT, Dr. LACY I., Southern Presbyterian Mission, Kiangyin, China: Reptiles, batrachians and an insect from China (58877); 2 alligator skins from China (58925, collected for the Museum).

MOODIE, Miss MARION E., Calgary, Alberta, Canada: 300 specimens of plants from Alberta (59247, purchase).

MOONEY, JAMES, jr., Washington, D. C.: Nest of flying squirrel, *Sciuropterus volans* (59685).

MOORE, A. R., Merritt, Fla.: Cricket, *Stiaptor* sp. (58685).

MOORE, CLARENCE B., Philadelphia, Pa.: Skeletal material from "The Indian Knoll," a site on Green River, Ohio County, Ky., from near Colvin Lake, Ballard County, Ky., and from Hales Point, Lauderdale County, Tenn., all collected by the donor (59526, 59733). (See under Academy of Natural Sciences.)

MOORE, H. C., Alma, Mich.: Cast of a bird amulet from Marathon Township, Lapeer County, Mich. (59058).

MOORE, J. E., Princess Anne, Md.: 96 stone implements typical of the Eastern Shore of Maryland near the peninsula between Big Monie and the Wicomico Rivers (59071, exchange).

MOORE, Dr. RILEY D., U. S. National Museum: 105 specimens of walrus and mammoth ivory worked up by Eskimos for jewelry mountings, collected by Dr. Moore in Alaska (59936, loan).

MOREIRA, Señor CARLOS, Rio de Janeiro, Brazil: 6 isopods collected in Petropolis, Brazil (59327).

MORGAN, JAMES MORRIS, Washington, D. C.: 2 specimens of plants from the Solomon Islands (59205).

MORRIS, FRANCIS J. A., Peterborough, Ontario, Canada: 38 specimens of ferns from Ontario (59007, 59838).

MORRIS, Mrs. JOHN SPEED, Washington, D. C.: Child's dress made by Mrs. Thomas Jefferson Randolph (58915, loan).

MORRISON, Miss FANNIE A. (See under Putnam, Mrs. Fannie Brown, Estate of.)

MOSBY, Col. JOHN S., Washington, D. C.: Original printed copies of 2 general orders issued by Maj. Gen. J. E. B. Stuart, C. S. Army, dated March 12 and March 18, 1863, respectively (58977, loan).

MOSCOW, RUSSIA, CABINET ICHTHYOLOGIQUE DE L'ACADEMIE D'AGRICULTURE DE MOSCOU: 2 specimens of gudgeon *Gobio ussuriensis*, and a specimen of loach, *Gobiobotia pappenheimi* (59580, exchange).

MOSS ROSE MANUFACTURING CO., THE, Philadelphia, Pa. (through Mr. N. W. Doorly, New York City): 19 samples of cotton and cotton and silk mixed upholstery, tapestry, and drapery fabrics (59614).

MOUZON, Miss HARRIET P., Dallas, Tex.: 2 grasshoppers and 2 specimens of Cactaceæ, from southern Brazil (58942).

MOXLEY, GEORGE L., Los Angeles, Cal.: 18 specimens of plants from California (58783, 59343).

MUNROE, Dr. CHARLES E., Washington, D. C.: Flashing tests for gunpowder (Nos. 1 to 8) (59787).

MUNROE, Miss HELEN, Smithsonian Institution: 3 beaded bags and a silk fan with ivory sticks, used during the early part of the 19th century (58638, 59197). Loan.

MUNSON, HENRY, Philadelphia, Pa.: Specimen of radiated titanite from Lambertville, N. J. (59207).

MUSEO NACIONAL. (See under Buenos Aires, Argentina.)

MUSEO NACIONAL. (See under San José, Costa Rica.)

MUSEU PAULISTA. (See under São Paulo, Brazil.)

MUSEUM OF COMPARATIVE ZOÖLOGY. (See under Harvard University.)

NASSAU STAMP CO., New York City: 1,036 20th century foreign postage stamps (59251, purchase).

NASSE, Dr. EDMUND, Wellington, Mo.: Portion of fossil musk-ox skull and miscellaneous fragments of bones (59409).

NATIONAL HANDLE CO., THE, Cleveland, Ohio: 5 specimens showing steps in the manufacture of a pitchfork handle (59786).

NATIONAL MUSEUM. (See under Melbourne, Victoria, Australia.)

NATIONAL SILK DYEING CO., Paterson, N. J.: 63 samples representing silk skein-dyeing and silk piece-dyeing and printing (58940).

NATIONAL SOCIETY OF THE COLONIAL DAMES OF AMERICA, Washington, D. C.: 3 white embroidered silk and satin waistcoats and a pair of black silk trousers, which belonged to George Mason of Gunston Hall, author of the "Bill of Rights," lent to the Colonial Dames by his great-great-grandson, Dr. Emlyn Harrison Marsteller, jr., of Virginia and New York (59033); pair of shoe buckles which belonged to the Hon. John Barclay, mayor of Philadelphia in 1791, and were worn by him at the presidential receptions (59151); miscellaneous historical relics (59612, 59656, 59666, 59687, 59703); sword and scabbard carried during the War of the Revolution by Capt. Jonathan Lawrence, Continental Army, and a wedding dress and pair of slippers worn by Mary Lynch in 1740 (59730). Loan.

NATIONAL SOCIETY OF THE DAUGHTERS OF THE AMERICAN REVOLUTION, Washington, D. C.: Set of doll's china and furniture, Japanese mirror, piece of lace and 2 spindles, and 3 artificial flowers made of feathers (59304, loan).

NAVY DEPARTMENT: Manganese nodule recovered by the cable ship *Mackay-Bennett*, June 27, 1915, in about 900 fathoms of water, received through the Hydrographic Office (59003).

NELSON, C. Z., Galesburg, Ill.: Living specimen of a cactus, *Opuntia*, from Florida (59105, exchange).

NELSON, ENRIQUE M. (See under Argentina, Comision de la Exposicion Universal, 1915, San Francisco, Cal.)

NEPHI PLASTER & MANUFACTURING CO., Salt Lake City, Utah: 120-pound block of rock gypsum and 12 2-pound samples of gypsum plasters (59856).

NETHERLANDS AND COLONIES, CENTRAL COMMISSION OF THE, PANAMA-PACIFIC INTERNATIONAL EXPOSITION, 1915, San Francisco, Cal. (through Mr. F. L. W. MacDonald, acting commissioner of the Netherlands East Indies): 22 specimens of Javanese batik work on cotton and silk, made by prisoners in penal institutions of Java, and a series of 14 small samples from Djocjakarta, Java, illustrating the batik process of decorating cotton cloth (59191, purchase); 14 framed enlarged photographs (59673, purchase); specimens of tea, coffee, spices, resins, drugs, and miscellaneous agricultural products (59690).

NEW ENGLAND STAMP CO., THE, Boston, Mass.: 85 20th century foreign postage stamps (59215, purchase).

NEWMAN, A. D., Harrisonville, Mo.: Blind amphipod crustacean, *Eucrangonyx mucronatus*, from a well at Harrisonville, on the farm of Mr. Newman (58756).

NEWMAN, S. M., jr., Sterling, Va.: Nest of orchard oriole, *Icterus spurius*, from Virginia (58695).

NEW MEXICO COLLEGE OF AGRICULTURE AND MECHANIC ARTS, State College, N. Mex.: Type specimen of a plant, *Boerhaavia organensis* (59129, exchange).

NEW YORK BOTANICAL GARDEN, Bronx Park, New York City: 25 specimens of fungi from Florida (58666); 20 specimens of mosses from Florida and Bermuda (58667); 467 specimens of plants from the West Indies (58832, 59256, 59341, 59795); 243 specimens of hepatics, chiefly from the United States and the West Indies (59052); 8 living specimens of Cactaceae (59146); 63 living specimens of Cactaceae collected in

NEW YORK BOTANICAL GARDEN—Contd. South Carolina and Florida by Dr. J. K. Small (59512, 59770); 6 photographs of plants (59808); 5 living specimens of a plant, *Rhodiola rosea*, collected by Mr. Percy Wilson in Pennsylvania (59905). Exchange.

NEW YORK CITY, CITIZEN'S COMMITTEE (through Dr. George F. Kunz, chairman, executive committee): Badge used at the celebration of the 250th anniversary of the establishment of the present form of city government in New York, and the adoption for the first time in the history of New York of an official city flag (58651).

NEW YORK STATE MUSEUM, Albany, N. Y. (through Dr. H. D. House): 113 specimens of plants (58998); 124 specimens of plants from New York (59061, exchange).

NEW ZEALAND, COMMISSION OF THE DOMINION OF, PANAMA-PACIFIC INTERNATIONAL EXPOSITION, 1915, San Francisco, Cal. (through Mr. E. Clifton, commissioner): 27 small samples of raw wool (59662).

NEY, ELISABET, MUSEUM. (See under Dibrell, Mrs. Joseph B.)

NIAGARA SILK MILLS, North Tonawanda, N. Y.: 4 samples of glove silk fabrics (Tricot and Milanese) in plain and Waldorf stripes (59533).

NICHOLAS, Dr. FRANCIS C., New York City: Fragment weighing 52 grams and shavings weighing 15 grams, of the Toluca, Mexico, meteorite (59203).

NICHOLSON FILE CO., Providence, R. I.: 11 specimens showing the different stages in the manufacture of a file (58906).

NICKENS, DAVID E., Washington, D. C.: Spotted salamander with eggs, from Stafford County, Va. (59627).

NIELSEN, NIEL. (See under Australian Commission, Panama-Pacific International Exposition.)

NIESS, Mrs. H. G., Washington, D. C.: English china drinking mug made during the early part of the 18th century (59116, loan).

NORTH CAROLINA GRANITE CORPORATION, THE, Mt. Airy, N. C.: Slab of granite, 34 by 34 by 3 inches (59915).

NORTH CAROLINA STATE MUSEUM, Raleigh, N. C. (through Dr. Joseph Hyde Pratt, State geologist, and Dr. L. W. Stephenson, U. S. Geological Survey, Washington, D. C.): Collection of Upper Cretaceous fossils from Snow Hill, N. C., comprising the types described by Prof. T. A. Conrad (59038, exchange).

NORTON, J. B., Bureau of Plant Industry, Washington, D. C.: 511 specimens of plants from the eastern part of the United States (58568, 58704, 58786, 58790, 59164, 59453, 59528, 59644). (See under Maxon, William R.)

NORTON, Prof. J. B. S., College Park, Md.: 48 specimens of plants from the District of Columbia and vicinity (58869, 58898).

NORTON & CO., Four Mile Run, Va.: Skull of a Florida manatee (59011).

NOVELTY TURNING CO., Norway, Me.: 16 specimens showing the stages in the manufacture of an electric sadiron handle, including a complete iron with connections (59815).

NOYES, I. G., Somerville, Mass.: Living specimen of a plant, *Talinaria palmeri*, from Mexico (58966).

NUILA, Dr. J. M., San Pedro Sula, Honduras, Central America: Little earthenware death's head and the handle of an earthen jar, found in the bank of the Rio Ulua, Honduras (58905).

OBERLIN COLLEGE, DEPARTMENT OF BOTANY, Oberlin, Ohio (through Prof. F. O. Grover): 77 specimens of sedges, *Carex*, from Ohio (58720, exchange).

O'FARRELL, Mrs. BRIDGET E., Washington, D. C.: Chair used by Gen. Robert E. Lee in the McLean house at Appomattox Court House, Va., April 9, 1865, when writing the note accepting the terms proposed by Gen. U. S. Grant for the surrender of the Army of Northern Virginia (59140).

OLIVER, W. R., Auckland, New Zealand: About 500 specimens, 66 species, of mollusks from the Kermadec Islands and Australia (59092).

O'NEILL, J., Ritta, Fla.: Fragment of a meteoric stone weighing 1,050 grams, found in Lake Okechobee, Fla. (59628, purchase).

ORCUTT, CHARLES R., San Diego, Cal.: About 440 land, fresh-water and marine shells from various parts of the world (59034, 59330, 59523, 59643, 59762); Tertiary fossils from San Diego and San Quentin, Lower California (59279, exchange).

OREGON AGRICULTURAL COLLEGE, Corvallis, Oreg. (through Prof. H. S. Hammond): 64 specimens of plants from Oregon (59195, 59468, 59708).

OREGON COMMISSION, PANAMA-PACIFIC INTERNATIONAL EXPOSITION, 1915, San Francisco, Cal. (through Mr. Oscar E. Freytag, chief of agriculture): Specimen of teasel plant as grown in the field and a sheaf of flax in the seed (59634).

ORIENTAL SILK PRINTING CO., Haledon, N. J.: 5 samples of novelty silks printed with "Rose Celestielle" and Russian designs (59532).

ORINOKA MILLS, THE, Philadelphia, Pa.: 18 specimens of silk, cotton, wool and mixed tapestries, upholstery and drapery fabrics (59029); 4 samples of plain and brocaded upholstery and drapery fabrics, received through Mr. N. W. Doorly (59942).

OSBORNE, Rev. A. V. E., Sheik Othman, Arabia: Mohammedan rosary of olive wood, carved, and certificate of a Mohammedan pilgrim to Mecca (59101, purchase).

O'SULLIVAN, LAWRENCE, Washington, D. C.: Irish half-penny issued in 1822 (59676).

OTTOLENGUI, Dr. R., New York City: 4 photographic plates of typical specimens of the lepidopterous genus *Antographa* (59487).

OUGHTON, GEORGE. (See under Australian Commission, Panama-Pacific International Exposition.)

OVER, Prof. W. H., University of South Dakota, Vermillion, S. Dak.: Fossil crabs, representing the types of 3 new species, described by Miss M. J. Rathbun (59831). (See under South Dakota, University of.)

OX FIBRE BRUSH CO., Frederick, Md.: 57 specimens showing stages in the manufacture of fibre brushes, including crude fibres and finished brushes (59816).

OYSTER, D. WILLIAM, Washington, D. C.: Moro barong with carved ivory and silver handle, and a Moro kris with carved ivory and gold handle (58727, purchase).

PACHECO H., M., Guatemala City, Guatemala: Skin of a quetzal, *Pharomachrus mocinno*, from Guatemala (59620).

PACIFIC TANK & PIPE CO., San Francisco, Cal.: Model of a cyanide leaching plant (59576).

PALERMO, ANTONY, Washington, D. C.: Roman bronze coin issued during the reign of Emperor Hadrian, 117–138 A. D. (59524).

PALLISTER, Prof. H. D., State School of Mines, Fort Bliss, Tex.: A solpugid, one of the jointed spiders (58881).

PALMER, WILLIAM, U. S. National Museum: 3 small mounted mammals (58537); specimen of lichen, *Cladonia cristatella*, from Plummers Island, Md. (59088); 10 specimens, 2 species, of marine mollusks collected in Chesapeake Bay near Chesapeake Beach, Md. (59477); young king rail, *Rallus elegans*, from Washington, D. C., and 2 nests and 5 eggs of a barn swallow, *Hirundo erythrogaster*, from Maryland (59748).

PANAMA, GOVERNMENT OF, Panama: 82 specimens of economic woods collected in the Republic of Panama by Prof. H. Pittier for the Panama National Exposition of 1915 (58894).

PANAMA CANAL ZONE, BIOLOGICAL SURVEY OF. (See under Smithsonian Institution.)

PANAMA-PACIFIC INTERNATIONAL EXPOSITION, 1915, San Francisco, Cal. (through Mr. O. H. Fernbach, secretary of the International Award System): 2 diplomas conferred, respectively, upon the U. S. National Museum and the department of biology of the Museum, by the International Jury of Awards of the Exposition (59791).

PARISH, S. B., San Bernardino, Cal.: 25 specimens and a photograph of plants

PARISH, S. B.—Continued.
from California and Nevada (58541, 59022, 59637, 59661, 59794).

PARKER, Dr. A. C., Altmar, N. Y.: 2 beetles (58823).

PARKS, Dr. W. F., St. Louis, Mo. (through Mr. D. I. Bushnell, jr.): Unfinished pipe found in Jackson County, Mo. (59861).

PARSONS, ARTHUR J., Estate of (through Hon. Herbert Putnam, executor, Washington, D. C.): 2 oil paintings, a landscape by Peter de Wint and a landscape by John Constable (59349, loan).

PARTELLO, Col. J. M. T., U. S. Army, Inglewood, Cal.: A moth (58876).

PATTERSON, Mrs. JAMES, Washington, D. C.: 2 pairs of epaulets, a chapeau, a sword knot, 2 pieces of gold braid and parts of epaulets, worn by Chief Engineer George R. Johnson, U. S. Navy (59655).

PATTISON, Capt. H. H., U. S. Army, and W. D. PATTISON, Winamac, Ind.: Part of a skeleton of a mastodon, from the Pattison farm, about 15 miles northwest of Winamac (58605).

PAULING, FREDERIC, New York City: 2 aquatints and a steel engraving (59315).

PEABODY MUSEUM OF NATURAL HISTORY. (See under Yale University.)

PEACOCK, Miss BESS REED, Roswell, N. Mex.: 15 specimens of plants from New Mexico (59087).

PECK, M. E., Salem, Oreg.: Worms, crustaceans, mollusks, amphibians, and a lizard (59584).

PELOT, Mrs. MARGARET E. M., Chevy Chase, Md.: Sample of early English machine-made lace net (59328).

PERHAM, W. L., Washington, D. C.: Nearly complete skeleton of a whistling swan, *Olor columbianus*, from Maryland (59750).

PERUVIAN EXPEDITION OF 1914, 1915 (under the auspices of Yale University and the National Geographic Society, Dr. Hiram Bingham, director): 2,000 specimens of plants, chiefly from Peru, received through Mr. O. F. Cook, Bureau of Plant Industry (58855).

PERUVIAN GOVERNMENT: Collection of fishes obtained in Peru in 1907–1908 by Dr. Robert E. Coker when engaged in fishery investigations for the Peruvian government, and reported on by Dr. B. W. Evermann and Mr. Lewis Radcliffe (59892).

PETER, WALTER G., Georgetown, D. C.: Objects of artistic and domestic interest formerly belonging to Gen. and Mrs. Washington at Mount Vernon, including china and glassware, furniture, pictures, kitchen utensils and miscellaneous articles; 20 letters owned by Mrs. Washington and a scrap book of documents relating to the settlement of her estate (59939, loan).

PETEREIT, ALBERT H., New York City: Specimen of euxenite and 1 of ampangabeite, from Madagascar (59030, purchase).

PETERSON, W. M. (See under Interior, Department of.)

PEZET, F. A., Washington, D. C.: Oil painting representing the transit of St. Joseph, attributed to Murillo or to Meneses Osorio, a disciple of Murillo (59678, loan).

PHELPS, DODGE & Co., New York City: Stope from the "Copper Queen Mine," Bisbee, Ariz. (59577).

PHILIP, J. VAN NESS, Claverack, N. Y.: Oil portrait of Maj. Gen. John P. Van Ness, by Gilbert Stuart (59182, loan).

PHILIPPINE COMMISSION, LOUISIANA PURCHASE EXPOSITION, St. Louis, Mo.: Fish nets and traps, bird traps, baskets, a hammock, and pottery and gourd lamps (58718).

PHILIPPINE ISLANDS, GOVERNMENT OF THE, Manila, P. I.:

Specimens illustrating the work of the Philippine schools, consisting principally of basketry and textiles, collected by the Bureau of Education, Manila (59960, purchase).

Bureau of Science: 1,200 specimens of plants chiefly from Amboina (58584, exchange); 1,051 specimens of plants from Western Australia (59771, exchange); 16 skins and skulls of rats

PHILIPPINE ISLANDS, GOVERNMENT OF THE—Continued.
from Manila (59010); 100 specimens of plants from the Philippine Islands (59415, exchange).

Philippine Board, Panama-Pacific International Exposition, 1915 (San Francisco, Cal.): 110 6-foot boards and 100 hand samples of Philippine commercial woods (59593, purchase); an educational exhibit entitled "Fibers from the growing plants to the finished products"—received through Mr. Frank L. Crone, director of education for the Philippine Islands (59683).

PHILLIPS, Dr. W. A., Evanston, Ill.: 3 deer-antler hammers used by the ancient flint quarrymen of the Mill Creek district, southern Illinois (58955).

PILSBRY, Dr. H. A., Academy of Natural Sciences, Philadelphia, Pa.: 8 mollusks, paratypes of *Oreohelix yavapai* var. *angelica*, collected in the Grand Canyon, near base of Crossbed sandstone, Bright Angel Trail (59178).

PIPER, Prof. C. V., Bureau of Plant Industry, Washington, D. C.: 5 specimens of plants from Virginia (59645).

PIPPEN, A. L., Water Valley, Ala.: 8 mollusks, *Glandina*, from Choctaw County, Ala. (58616).

PIRTLE, Dr. G. W., Carlisle, Ind.: Larvæ and pupæ of parasites of *Stagmomantis carolina* (58880).

PITTIER, Prof. H., Bureau of Plant Industry, Washington, D. C.: 510 specimens of plants, 2 bats, a snake, and a sample of ipecac roots, *Euragoga ipecacuanha*, from Panama (58566, 58725, 58982); 9 specimens of plants from Colombia, South America (59114); fungus, *Mitremyces*, from the District of Columbia (59554); 155 specimens of plants from Australia (59911).

POGUE, Dr. JOSEPH E., Evanston, Ill.: Collection of the associated rocks, with thin sections, from the emerald mines at Muzo, Colombia, South America (59404, collected for the Museum). (See under Codazzi, Ricardo Lleras.)

POMONA COLLEGE, Claremont, Cal.: 42 crustaceans from California, received through Dr. William A. Hilton (59722); 134 specimens of plants from Nicaragua, received through Prof. D. L. Crawford (59809).

POOLE, ARTHUR J., U. S. National Museum: 5 white-footed mice, *Peromyscus*, from West Virginia (58872); specimen of *P. leucopus noveboracensis*, from New Jersey (58766).

POOLE, WILLIS, Cedar Grove, Md.: Snake, *Coluber obsoletus*, from Maryland (58769.)

PORTER, Mrs. HENRY KIRK, Washington, D. C.: 41 bonnets of the 19th century (59759).

PORTER, JOHN O., Washington, D. C.: 2 restorations of dinosaurs, modeled by Mr. C. W. Gilmore (59862, purchase).

PORTER, RAY O., Kansas City, Kans.: 2 sea urchins, *Heterocentrotus trigonarius*, and 4 starfishes, *Archaster typicus*, from Camote Islands, near Cebu, a sponge, "Venus flower basket," *Euplectella speciosa*, from Talisay, Cebu Islands, and 5 sea horses, *Hippocampus kuda*, from the Philippines (59867).

POST OFFICE DEPARTMENT: 10 sets of specimen stamps, etc., 9 of which are in triplicate and 1 in duplicate (approximately 1,533 specimens), and 32 specimen stamps of the Republic of Salvador, received from the International Bureau of the Universal Postal Union, Berne, Switzerland (58600, 58844, 58901, 59107, 59227, 59397, 59639, 59729, 59869); 26 United States postage stamps, perforated 10, in triplicate (58721); 5 specimens each of the transitory issue of postage stamps of 1, 2, 3, 4, 5, and 10 centavos, received from the Director General of Posts, Mexico (58967); 2 specimens of a stamp issued for postage and war tax purposes by the Post Office Department, Ottawa, Canada (59230); receipt for postage to be paid in specie at the Boston Post Office, bearing date of July 1, 1849 (59231); 3 No. 5 2¢-stamped envelopes bearing the discarded stamp of 1915 (59419); 156 United States postage stamps, current issues (59541).

POZ, WILLIAM M., New York City: Specimen of pure dye silk dress goods, "silk-skin" (59613).

PRATT, Dr. JOSEPH HYDE. (See under North Carolina State Museum.)

PROFFITT, Mrs. ALICE D., Saguache, Colo.: 10 Lepidoptera (59018).

PROGRESSIVE SILK FINISHING CO., Hoboken, N. J.: 13 samples of various patterns of moiré silks (59691).

PURCELL, JAMES R., New London, Va.: Snake, *Lampropeltis getulus*, from Virginia (58816).

PURDUE UNIVERSITY, AGRICULTURAL EXPERIMENT STATION, Lafayette, Ind. (through Dr. J. C. Arthur): Specimen of a plant, *Hydrocotyle* (58595).

PURDY, J. W., Washington, D. C.: Photographic copy of a letter of pardon signed by Abraham Lincoln, October 4, 1864 (58818, loan).

PUTNAM, Mrs. FANNIE BROWN, Estate of (through Miss Fannie A. Morrison, executrix, Nashua, N. H.): 23 samples of human hair work made between 1870–1880 by Mrs. Putnam (59534).

PUTNAM, Hon. HERBERT. (See under Parsons, Arthur J., Estate of.)

PYNE, HENRY, Lowell, Ariz.: 2 cocoons of a moth, *Agapema anona* (58750).

QUAKE, J. H., Kalamazoo, Mich.: 7 freshwater mollusks (58680).

QUAKER LACE CO., INC., Philadelphia, Pa.: 16 samples of machine-made window lace, made on the Nottingham lace curtain and levers go-through machines (59935).

QUEENSLAND MUSEUM, Brisbane, Queensland, Australia: 87 species of Hymenoptera (59456, exchange).

QUINLAN, J. C. (through Mrs. Eleanor F. Quinlan, Yonkers, N. Y.): Map of England and Wales, wrought in sewing by Mary Iveson in the 13th year of her age, A. D. 1788 (58764, loan).

QUINTER, GEORGE E., Washington, D. C.: 100 muscoid Diptera from Paonia, Colo. (58936).

RAMSDEN, CHARLES T., Guantanamo, Cuba: Fresh-water shrimp, *Macrobrachium olfersii*, and 2 bats, *Erophylla sezekorni* and *Eumops glaucinus*, from Cuba (58579, 59253).

RANDOLPH, WILSON CARY NICHOLAS, jr., Lynchburg, Va.: Pair of riding boots worn by Thomas Jefferson, received from his great-great-grandson (58715, loan).

RANSOM, Miss IRENE, Estate of (through Mr. A. W. Barber, Cleveland, Ohio, and Mrs. Nellie G. Cole and Mrs. Lillian G. Tillotson, Painesville, Ohio, executors): Oil portrait of Salmon P. Chase, by Miss Caroline L. Ormes Ransom (59458).

RANTOUL, Hon. ROBERT S., Salem, Mass. (through Mrs. George L. Andrews, Washington, D. C.): Light gray stiff hat of the style worn in 1877 (59083).

RAPP, F. M., Spokane, Wash.: 3 raffia mats collected by the donor in Angola, Portuguese West Africa (59062).

RATHBUN, Miss MARY J., U. S. National Museum: Snake and a lizard, from Alexandria County, Va. (58864). (See under Kite, Miss Rebecca.)

RATHBUN, Dr. RICHARD, U. S. National Museum: Pair of Tower pistols (59166).

RAVENEL, HENRY, Washington, D. C.: Small white pearl taken from a common little-neck clam (58888).

READ, A. C., Santa Barbara, Isle of Pines, Cuba: Red-tailed hawk, *Buteo borealis* subspecies, from Isle of Pines (58637).

READ, A. D., Senorito, N. Mex.: 28 specimens of plants from New Mexico (59243).

REED, Dr. CARLOS S., Director del Museo Educacional de Mendoza, Mendoza, Argentina: Natural history specimens from Argentina, including mammals, birds, reptiles, insects and living plants, and a postage stamp (58886, exchange).

REED, HOWARD S.: 83 bird skins from Honduras (59224, loan).

REHDER, KARL, Granada, Spain: 4 skins and skulls of a Spanish ibex, *Capra hispanica* (58707, purchase); skin and skull of a Spanish ibex, *C. hispanica* (59261).

REYNOLDS, BRONTE A., Bureau of Entomology, Washington, D. C.: 3 photographs of Bannock Indians (58820); 129 archeological specimens mainly from the Great and Little Falls, D. C., and from Red Banks and Bennings, D. C. (59565); British military uniform button of the period of the Revolution, and a United States Naval belt plate of the period of the Civil War (59605).

REYNOLDS, Miss E., Washington, D. C.: Uniform coat worn by Maj. Gen. John F. Reynolds, U. S. Volunteers, in 1841, when a cadet at the U. S. Military Academy at West Point, and a pair of epaulets worn by him in 1855, when Captain, 3d U. S. Artillery (59726).

REYNOLDS, ELMER W., Vienna, Va.: 2 dragonflies (58694).

REYNOLDS, GEN. JOHN FULTON, FORTRESS NO. 1, NATIONAL DAUGHTERS OF THE GRAND ARMY OF THE REPUBLIC, Buffalo, N. Y. (through Miss Agnes O'Hern, commander): Membership pin of the Society (59940).

RICE, ARTHUR P., Merida, Yucatan: 7 photographs of Isthmian Indians and 2 pottery bird-whistles of the ancient Maya Indians (59466); ancient Maya pottery from Yucatan, consisting of 17 specimens and fragments (59591).

RICH, E. L., Hermon, N. Y.: Specimen of a fern, *Polypodium*, from New York (58817, exchange).

RICHARDSON, Mrs. CHARLES W., Washington, D. C.: Small gold locket containing a lock of the hair of Andrew Jackson (59082); piece of silk brocaded in gold and trimmed with lace and ribbon, parts of the material used in making the dress worn by Mrs. Theodore Roosevelt at the inaugural ball of President Roosevelt in 1905 (59264). Loan.

RICHEY, Mrs. STEPHEN O., Washington, D. C.: Piece of point d'Argentan lace from a collar that belonged to the Empress Eugenie, purchased in Paris shortly after the Franco-Prussian War by the late Miss Ellen C. deQ. Woodbury and inherited by her niece, Mrs. Minna Blair Richey, the donor (59057).

RIDEING, B. P., New York City: 7 samples of novelty coatings and pile fabrics (59285).

RIDGWAY, ROBERT, U. S. National Museum: Screech owl, *Otus asio*, from Illinois (59099).

RIGHTMIRE, HARL, Plainview, Tex.: 2 meteoric stones from near Plainview (59363, purchase).

RINCONES, Dr. R. GONZALES, Caracas, Venezuela: About 275 insects from Venezuela (59498, exchange).

RITCHIE, A. H., Hope, Kingston, Jamaica: About 150 parasitic Hymenoptera (58753).

ROBERTSON, E. W., Bel Alton, Md.: Barn owl, *Tyto pratincola*, from Maryland (59461).

ROBERTSON, L. P., Petersburg, Va.: Partial albino field sparrow, *Spizella pusilla*, from Virginia (59154).

ROBINSON, Col. WIRT, U. S. Army, West Point, N. Y.: 27 beetles (59486, 59497).

ROCKEY, H. F., Tylersville, Pa.: Small stone metate, polished stone celt, water-worn pebble, and an arrowpoint, from Porto Rico (59430).

ROEDER, C. H., Silver Spring, Md.: Photograph of Thaddeus Stevens (58987).

ROFKAR, W. F., Port Clinton, Ohio: 10 bats, consisting of a specimen each of *Myotis* and *Nycteris* and 8 specimens of *Pipistrellus* (59478).

ROHWER, S. A., Bureau of Entomology, Washington, D. C.: 196 sawflies from Formosa, representing 43 species, 26 being paratypes of new species (58935).

ROIG, Dr. MARIO SÁNCHEZ, Havana, Cuba: 2 crabs, *Pinnotheres ostrearius*, and an imperfect specimen of a new shrimp, *Palæmon* species, from Cuba (59373).

ROLLMAN, LEONARD, Hyattsville, Md.: Dragonfly from Hyattsville (58691).

ROSEN, H. R., U. S. National Museum: 14 specimens of fungi from the District of Columbia and vicinity (59707, 59796).

ROSENBERG, E., Copenhagen, Denmark (through Dr. A. G. Bøving, Washington, D. C.): Larvæ, pupæ or adults of 15 species of Danish long-horn beetles, Cerambycidæ (58939).

ROSENTHAL, W. E., New York City (through Mr. N. W. Doorly): 17 samples of upholstery and drapery fabrics, manufactured by J. W. Barber & Co. and the Bennett & Aspden Co. (59714).

ROST, MILES E., Washington, D. C.: Pen-and-ink drawing in colors, "Chief Hollow Horn Bear," Sioux (59070, loan).

ROWLETT, Mrs. S. C., Crawford, W. Va.: Specimen of a plant, *Conopholis americana*, from West Virginia (59736).

ROYAL BOTANIC GARDENS. (See under Kew, England.)

RUBEY, Hon. THOMAS L. (See under Full, Webster.)

RÜCKNOW, LEO, Mancos, Colo. (through Dr. J. Walter Fewkes): Grooved stone ax found by the donor at Aztec Spring, near Cortez, Colo. (59374).

RUPERT, J. A., Oak Grove, Oreg.: 10 specimens of siderite from Washington (59225).

RUSSEL, Maj. EDGAR, U. S. Army, and Mrs. RUSSEL, Washington, D. C.: Weapons and armor, consisting of 14 specimens, 11 hats, 2 food-bowl covers and a carved wooden figure (Igorot), collected by the donors in the Philippine Islands between 1898–1901 (58548, 58644).

RUSSELL, B. R., San Saba, Tex.: 4 living specimens of Cactaceae from Texas and Missouri, and 3 packets of cactus seeds from Texas (59239, exchange).

RUSSELL, GEORGE H., Washington, D. C.: Ethiopic manuscript (59420, loan).

RUST, HENRY J., Coeur d'Alene, Idaho: 80 specimens of plants from Idaho (59353).

RUTH, JOHN A., Clifton, N. J.: 13 specimens of plants from New Jersey (59176).

RYDING, H. W., Smolan, Kans.: 16 specimens of plants from Kansas (58787).

SAFFORD, W. E., Bureau of Plant Industry, Washington, D. C.: Illuminated manuscript—Edict of Pope Paul III (59610, loan).

SAMUELS, J. A., Botanical Garden, Bronx Park, New York City: 6 mineral specimens from Tyrol (59382, purchase).

SAN JOSÉ, COSTA RICA, MUSEO NACIONAL: 3 living specimens of a cactus, *Epiphyllum*, from Costa Rica (58965).

SANZIN, RENATO, Mendoza, Argentina: 5 specimens of plants, 10 reptiles, and a small collection of insects, from Argentina (58923).

SÃO PAULO, BRAZIL, MUSEU PAULISTA: 21 specimens of Cactaceae from Brazil (58964).

SCHALLER, Dr. W. T., U. S. Geological Survey, Washington, D. C.: Collection illustrating the gem-bearing pegmatites of San Diego County, Cal. (58896, collected for the Museum).

SCHAUS, WILLIAM, Puerto Barrios, Guatemala: 4 boxes of insects, comprising all groups exclusive of Lepidoptera, and 3 boxes of Microlepidoptera (59481).

SCHMID, EDWARD S., Washington, D. C.: Gray-cheeked thrush, *Hylocichla aliciæ*, and a crimson parrot, *Platycercus elegans*, with trunk skeleton of the latter (58954); double yellow-headed parrot, *Amazona oratrix* (59016); marmoset, *Œdipomidas œdipus* (59424); 2 specimens of a screech owl, *Otus asio*, from Washington, D. C. (59742).

SCHMITT, WALDO, U. S. National Museum: 2 specimens, representing 2 species, of fossil gastropod mollusks from Newport, Oreg. (58801).

SCHOFIELD, Ven. THOMAS ALVORD, Denver, Colo.: Specimen of tungsten ore from Colorado (59916).

SCHOLL, ERNEST E., State Department of Agriculture, Austin, Tex.: 37 land shells, *Rumina decollata*, from a colony introduced at San Antonio, Tex. (59402).

SCHROEDL, GUIDO, Baltimore, Md.: 17 archeological specimens from the Old World and from America (59600, loan).

SCHWALENBERG, L. G., Salt Lake City, Utah (through Mr. Victor C. Heikes): Specimen of scheelite from Bonita, near Osceola, Nev. (59124).

SCIDMORE, Miss ELIZA R., Washington, D. C.: 19 specimens of Chinese porcelain, bronze and brass (59111, loan).

SCOTT STAMP & COIN CO., THE, New York City: 115 20th century foreign postage stamps (59198, purchase).

SEAL, WILLIAM P., Delair, N. J.: Fishes, mammals, reptiles, a bird, a leech and an insect (58679); 4 specimens of a jumping-mouse, *Zapus*, and a shrew, *Blarina*, from New Jersey (58825); 5 specimens of plants, *Cabomba* (58831).

SEAMAN, Mrs. WILLIAM H., Washington, D. C.: The herbarium of the late Dr. William H. Seaman, consisting of 2,645 mounted specimens of plants (58944).

SEIP, Dr. M. S., Easton, Pa.: 2 photographs of the portraits of John Penn and William Williams (59109); photograph of a portrait of Caesar Augustus Rodney and a photograph showing 9 portraits of George Taylor, a view of his house and his monument at Easton, Pa. (59412).

SELLARDS, Dr. E. H., State geologist, Tallahassee, Fla. (through Dr. T. Wayland Vaughan): About 35 specimens, representing 6 species, of Miocene fossils from Knox Still Landing, New River, Fla. (59171); 3 casts of extinct reptiles from Florida (59549).

SEVILLE, Miss M. W., Smithsonian Institution: Poster for "Milka" (59421).

SHANNON, R. C., Bureau of Entomology, Washington, D. C.: 2 specimens of a wood rat, *Neotoma*, from Virginia (59064); specimen of fungus, *Pycnoporus*, from the District of Columbia (59370).

SHARWOOD, W. J., Lead, S. Dak.: Specimen of greenockite from Black Hills, S. Dak. (58797); 15 samples of rocks and ores from the Homestake Mine, Lead (58957).

SHEEHY, EDWARD T., Tubac, Ariz.: Specimen of wulfenite from the Tyndall Mining District, Ariz. (59321).

SHEIP, HENRY H., MANUFACTURING Co., Philadelphia, Pa.: Series of specimens showing the steps in the manufacture of cigar boxes from Spanish cedar (59813).

SHELDON, G. L., Ely, Nev.: Specimens of a chloritic mineral and tungsten minerals, from Nevada (59649).

SHELLMAN, Miss MARY B., Westminster, Md.: Apron of barege, the design of which represents the Confederate flag, worn by a Baltimore belle in 1861 as an evidence of her sympathy for the Southern cause (58884).

SHEPHERD, Col. C. L., Kensington, London, England: 21 fossil otoliths from the Tertiary rocks of Europe (58747, exchange).

SHERIDAN, Mrs. PHILIP H., Washington, D. C.: Dress worn by Mrs. Sheridan when Gen. Sheridan came to Washington in command of the Army in 1883 (59081, loan).

SHERMAN, Hon. P. TECUMSEH, New York City: Memorials of Gen. William Tecumseh Sherman, presented by his son. (With the exception of three objects, formerly a loan.) (59388).

SHIELDS, Dr. EDGAR T., Narberth, Pa.: Giant salamander from Ya River, Yachow, China (58592).

SHIPPY, N. D., Ogilby, Cal.: Specimen of hübnerite and 1 of cinnabar, from near Round Mountain, Nev. (58961); specimen of dumortierite, and 9 crystals of limonite pseudomorph after pyrite, with samples of the rock in which they occur (59693).

SHUFELDT, Dr. R. W., U. S. Army (retired), Washington, D. C.: Skeleton of a southern grackle, *Gracula religiosa* (58556); 7 bats, consisting of 2 specimens of *Eptesicus fuscus* from Takoma Park, D. C., and 5 of *Myotis* from Fort Wingate, N. Mex. (58564); 5 skeletons of tree-ducks from Texas, including a black-bellied tree-duck, *Dendrocygna autumnalis*, and a fulvous tree-duck, *D. bicolor* (58576); skin of a monkey, *Ateles ater*, from Brazil (58657); chipmunk, *Eutamias*, and a tree-frog, *Hyla arenicolor*, from New Mexico (59063, 59720); skeleton of saw-whet owl, *Cryptoglaux a. acadica*, from Washington, D. C. (59250).

SIPTON, Dr. H. A., Milwaukee, Wis.: 3 grizzly bear skulls from Stikene River, British Columbia (59568).

SILBERLING, A. C., Barber, Mont.: 45 Fort Union mammals from the vicinity of Melville, Mont. (58603, purchase).

SILVA, Dr. ANTONIO CARLOS SIMOENS DA, Rio de Janeiro, Brazil: Small piece of jade, mounted in silver and polished on one face, from the State of Bahia, Brazil (59208).

SISK, CARL M., Clay City, Ind.: Earthenware effigy jar found in 1862 in a mound in Missouri (59376).

SKEELS, HOMER C., U. S. Department of Agriculture, Washington, D. C.: 15 specimens of orchids from the District of Columbia and vicinity (59360).

SLATER, MRS. H. D., El Paso, Tex.: 14 specimens of plants from Texas and New Mexico (58866, 58808).

SLEVIN, JOSEPH R., California Academy of Sciences, San Francisco, Cal.: 5 reptiles from California (59602).

SLOAN, C. G., & Co., Washington, D. C.: 21 manuscripts and books from the estate of W. S. Sutton (59833, purchase).

SLOAN, EARLE, Charleston, S. C.: About 1,000 Eocene bryozoans from South Carolina (58631); about 100 species of Eocene fossils from South Carolina and Georgia, and 60 species of Miocene fossils and 50 miscellaneous Tertiary fossils, from South Carolina (59258, exchange).

SMALLWOOD, Prof. W. M., Lake Clear, N. Y.: 3 mollusks, *Campeloma decisa*, from Lake Clear (58652).

SMITH, Prof. C. PIPER, College Park, Md.: 5 specimens of plants from Maryland (59757).

SMITH, MRS. EMMA J., Washington, D. C.: Oil painting, "Klingle Ford," by Max Weyl (58899, loan).

SMITH, Prof. FRANK, Urbana, Ill.: Earthworm, *Helodrilus welchi*, holotype, collected in Kansas by Dr. Welch and described by the donor (59293).

SMITH, Dr. J. HOLMES, University of Maryland, Baltimore, Md.: 32 anatomical specimens (59361, 59535, 59887).

SMITH, W. BRADFORD, Key West, Fla.: 2 wasps, *Stictia carolina* (59827).

SMITH & KAUFMANN, New York City: 10 samples of silk ribbons, including warp-printed, brocaded, moiré, grosgrain, satin and taffeta (58892).

SMITHSONIAN INSTITUTION:

Bronze medal (the work of Hans Schuler), commemorating the National Star-Spangled Banner Centennial Celebration held in Baltimore, Md., September 6–13, 1914 (59169); fossil bones collected in Siberia by Mr. Benno Alexander, with the Koren expedition (59325); bronze medallion received from the Holland Society of New York, commemorating the Three Hundredth Anniversary of the Founding of the Dutch Settlement on Manhattan in 1613 and the Two Hundred-Fiftieth Anniversary of the Founding of the Board of Aldermen in 1665 (59653); 2 bronze medals and 2 diplomas, conferred upon the Institution by the International Jury of Awards of the Panama-Pacific International Exposition, San Francisco, 1915 (59790).

Smithsonian Biological Survey of the Panama Canal Zone: Reptiles, batrachians and fishes, collected by Dr. Seth E. Meek, of the Field Museum of Natural History, and Mr. S. F. Hildebrand, of the Bureau of Fisheries, in 1911 and 1912 (59882, 59904).

Bureau of American Ethnology: 701 archeological specimens and 3 skeletons, from Utah and Wyoming, collected by Mr. Neil M. Judd in the summer of 1915 (58757); barrel of potsherds from the Nacoochee Mound in White County, Ga., being part of the collection gathered during the joint work of the Bureau and the Heye Museum during July and August, 1915 (58819); 7 photographs of beavers and their works (58979); 170 archeological objects collected by Mr. Gerard Fowke at the flint quarry shop sites at Crescent, St. Louis County, Mo. (59015); 23 lower and an upper jaw of Virginia deer, *Odocoileus*, and 14 lower and 3 upper jaws of bears, *Ursus*, from the Nacoochee Mound (59017); small collection of prayer sticks from a Pueblo shrine on the summit of Langley Peak, west of the Rio Grande and south of Rio Chama in New Mexico, collected by Mr. R. H. Chapman (59112); 30 cards used in playing the game "American Revolution," published in 1849, and presented to the Bureau by Mrs. Elizabeth H. Buckingham (59196); Indian potsherds and arrowpoints (53 specimens), mainly collected by Mr. Arthur L. Norman (59252); stone collar from Porto Rico (59280); point and tackle of salmon spear, a halibut hook and 5 small fishhooks, collected by Mr. Robert H.

SMITHSONIAN INSTITUTION—Continued.

Chapman on Nootka Sound, west coast of Vancouver Island (59288); set of ear perforators formerly owned by Wa'-thu-xa-ge of the Tsi'-zhu Wa'-shta-ge gens of the Osage tribe, received from Mr. Francis La Flesche (59782); sacred hawk bundle, or waxobe, of the Buffalo-face People of the Osage tribe, and an Osage Indian war shield, collected by Mr. La Flesche (59792, 59934).

National Museum, collected by members of the staff: Bartsch, Paul: Frog and 3 specimens of plants, from Florida (58562, 58567). Holmes, William H.: Samples of stones used in ancient buildings and sculptures in Honduras and Guatemala (59550); 5 stone implements and a fragment of pottery, from ancient ruins in Honduras and Guatemala (59559); small pitcher of archaic Guatemalan pottery (59677). Hough, Walter: 12 echinoids from the Tertiary rocks of California (59521); grooved stone (hammer or sinker), from a mound at West Berkeley, Cal. (59536). Hrdlička, Aleš: Portions of 53 small and 4 large mammals, from graves in southern Russia (59158). Maxon, William R.: 125 specimens of plants from New York (59907). Maxon, William R., and Paul C. Standley: 100 specimens of plants from Maryland and the District of Columbia (59760). Merrill, George P.: Samples of limestone from Bedford, Ind., and sample of coarse blue-gray marble from Aspen, Colo. (58796). Standley, Paul C.: 220 specimens of plants from Maryland and Virginia (58581); 665 specimens of plants and some land shells, from Florida (59440). Wherry, Edgar T.: Rocks and minerals from Dickerson, Md., and vicinity (58630); 2 stalactites from Lurich, Va. (58813); a series of specimens illustrating the occurrence of glauberite in Triassic rocks, a collection showing diffusion rings in red shale, and 20 specimens illustrating the genesis of chloropal, from Pennsylvania (59847).

National Museum, made in the Anthropological Laboratory: Plaster cast of a "ceremonial stone" of unique shape, the original, of banded slate, being the property of Mr. G. A. Webber, Williamsburg, Pa. (58549); 3 casts each of 2 stone pipes, the originals of which are the property of Mr. J. P. MacLean, Franklin, Ohio (59336); 3 casts each of 4 soapstone vessels from Wyoming (59411).

National Museum, made in the Laboratory of Mineral Technology: Model of Portland cement manufacturing plant (59898); a series of 84 cubes representing the distribution of the coal resources of the world amongst the various countries (59943); beehive coke oven model (59957); model showing the origin of coal (59958).

National Museum, made in the Laboratory of Wood Technology: Model of typical turpentine still (59843).

National Zoological Park: Skin and skull of a lion and of a ferret (58553); skin and skull of a fur seal (58623); skin and skull of a coypu from Argentina (58670); kangaroo, *Macropus rufus*, and porcupine, *Hystrix cristata* (58974); California sea-lion, *Zalophus californianus* (59170); lynx from New Hampshire (59177); South African ostrich, *Struthio australis*, Leadbeater's cockatoo, *Cacatua leadbeateri*, and northern raven, *Corvus corax principalis* (59387); head and feet of a Patagonian cavy, and 2 nilgai (59448); black leopard, *Felis pardus* (59668); nilgai, *Boselaphus tragocamelus* (59670); blue-fronted amazon, *Amazona æstiva*, black-necked screamer, *Chauna chavaria*, Lilford's crane, *Grus lilfordi*, black-necked swan, *Cygnus melancoryphus*, blue-bellied lorikeet, *Trichoglossus novæhollandiæ*, and scaly-breasted lorikeet, *Psitteuteles chlorolepidotus* (59756); egg of demoiselle crane, *Anthropoides virgo*, and of pea fowl, *Pavo cristatus* (59865); lesser vasa parrot, *Coracopsis nigra*, black-necked swan, *Cygnus nigricollis*, and Buffon's macaw, *Ara ambigua* (59866); scaly-breasted lorikeet, *Psitteuteles chlorolepidotus*, and gray jumper, *Struthidea cinerea* (59868).

SNYDER, C. P., Tofty, Alaska: Small collection of fossil bones and fossil seed, from Alaska (58929).

SOLEY, Lieut. JOHN C., U. S. Navy, New Orleans, La.: Specimen of seaweed, *Sargassum natans* (59511).

SOUTH DAKOTA, UNIVERSITY OF, Vermillion, S. Dak. (through Prof. W. H. Over): 52 specimens of plants from South Dakota (59467).

SOUTHERN BIOLOGICAL SUPPLY CO., New Orleans, La.: Marine invertebrates, insects, reptiles and batrachians, from Louisiana (58810, 59216).

SOWERBY, ARTHUR DE C., Tientsin, China: 88 mammals, and collections of birds, fishes, reptiles, batrachians and insects, from Manchuria (59055, 59462); 4 large and 16 small mammals and 70 birds, from northern China (59240). Collected for the Museum.

SPALDING, A. G., & BROS. MANUFACTURING CO., Chicopee, Mass.: 9 specimens showing the stages of manufacture of a tennis racket and a golf driver (59696).

SPEGAZZINI, Dr. CARLOS, La Plata, Argentina: 73 specimens of plants from Argentina (58947).

SPICER-SIMSON, T., New York City: Bronze Preparedness souvenir medal issued by the National Civic Federation, and a bronze Allied Relief souvenir medal issued by the American Fund for French Wounded, designed by the donor (59851).

SPRINGER, Hon. FRANK, East Las Vegas, N. Mex.: 93 stone implements collected on St. Paul Hill, opposite St. Paul, Ind. (59543).

STAMFORD MANUFACTURING CO., THE, Stamford, Conn.: 4 specimens of dyewoods in the log and 6 of dyewood extracts in jars (59814).

STANDLEY, Miss JEANETTE P., Fort Myers, Fla.: 205 specimens of plants from Florida (59626, 59912).

STANDLEY, PAUL C., U. S. National Museum: 14 illustrations of plants (58597); 309 specimens of plants, from Maryland, Virginia and the District of Columbia (58806, 58943, 59647, 59716, 59758, 59853, 59908).

STANDLEY, PAUL C., and H. C. BOLLMAN: 700 specimens of plants from Dutchess County, N. Y. (58799).

STATE, DEPARTMENT OF: 82 drawings in pencil, pen, charcoal, chalk, crayon and water color, executed by eminent contemporary French artists and presented to the people of the United States by citizens of the French Republic as a token of their appreciation of the sympathetic efforts of American citizens toward relieving the distress occasioned by the European war (59014).

STEARNS, Commander C. D., U. S. Navy: Unmounted Samoan taupo's headdress (59537, loan).

STEELE, E. S., U. S. National Museum: 609 specimens of plants from the eastern United States (58859, 59119).

STEINER, E. A., Breckenridge, Colo.: 10 specimens of ores from the Breckenridge District, Colo. (59312).

STEPHENSON, Dr. L. W. (See under Maryland Geological Survey, and North Carolina State Museum.)

STEVENS, Prof. G. W., Cambridge, Mass.: 1,600 specimens of plants from Oklahoma, of which 800 were purchased and 800 were a gift (58586).

STONE, Dr. GEORGE S., Punta Gorda, Fla.: 4 living specimens of plants from Florida (59663, exchange).

STONEX, WILBER L., Philadelphia, Pa.: Copy of the Magna Charta (59400).

STRAUS, A. H., & Co., New York City: Sample of printed lining silk, "The suffrage victory" (58970).

STRECKER, JOHN K., Waco, Tex. (through Dr. O. P. Hay): Skull of a fossil edentate, *Nothrotherium* (59218, exchange).

STRELAND, OSCAR, Philadelphia, Pa.: Specimen of radiated titanite from Lambertville, N. J. (59206).

STUNTZ, S. C., Vienna, Va.: 7 specimens of plants from Virginia (59299).

STURTEVANT, A. H., New York City: 3 fruit flies, consisting of 2 specimens of *Drosophila tripunctata* and a specimen of *D. ornatipennis* (59491).

SUMNER, Mrs. ALLEN M., jr., Dogue, Va.: Child's purple silk dress worn in the forties, and a child's old-fashioned white slip (59229, loan).

SUSSEX PRINT WORKS, Newton, N. J.: 4 samples of silk dress goods printed with Bolling crest designs (59282).

SWAN, Miss MARY ALLISON, Garden City, Long Island, N. Y.: Wax doll completely dressed, with fan and muslin jacket, child's blue-and-white china dinner set, and portion of a child's glass tea set (59819, loan).

SWEZEY, OTTO H., Honolulu, Hawaii: 84 Diptera from the Hawaiian Islands (59505).

SYDNEY, NEW SOUTH WALES, AUSTRALIA, AUSTRALIAN MUSEUM: 272-gram piece of the Mount Stirling, Australia, meteoric iron (59737, exchange).

SYDNEY, NEW SOUTH WALES, AUSTRALIA, BOTANIC GARDENS: 370 specimens of plants from Australia (58575, 58840, 59080). Exchange.

SYDNEY, NEW SOUTH WALES, AUSTRALIA, DEPARTMENT OF MINES: Specimen, weighing 510 grams, of the Molong, New South Wales, pallasite (59204).

TALLMADGE, ANDREW, Washington, D.C.: Snake, *Eutænia*, from Great Falls, Md. (59322); snake, *Storeria dekayi*, from Maryland (59542).

TAYLOR, Mrs. C. B., Washington, D. C.: Large stuffed specimen of a swell-fish, *Tetraodon* sp. (58804).

TAYS, J. W., El Paso, Tex.: 35 living specimens of cacti from the vicinity of El Paso (58543).

TELLO, Dr. JULIO C., Lima, Peru: Skull of an ancient Peruvian from Ica, and an ancient Peruvian "quipus" (record strings) and 4 pieces of highly decorated woven fabric (mummy wrappings), from Nasca (59226).

TEXAS FINE ARTS ASSOCIATION. (See under Dibrell, Mrs. Joseph B.)

THELLUNG, Dr. A., Zürich, Switzerland: 41 specimens of plants, *Amaranthus*, consisting largely of type material (58610, exchange).

THOMAS, Dr. J. OLIVER, Bluefields, Nicaragua, Central America: 3 stone battle-axes from Nicaragua (58838, purchase).

THOMPSON, Mrs. BURTON, New York City, and Mrs. C. HILL, Middlebury, Vt. (through Dr. Charles F. Langworthy, Washington, D. C.): Collection of dolls and dolls' accessories (58822).

THOMPSON, Dr. J. C., U. S. Navy, San Diego, Cal.: Reptiles from California (59601, 59806).

THOMPSON, Mrs. ROBERT MEANS, Washington, D. C.: Cap of cream-colored satin trimmed with pearls, worn by the donor's grandmother, Deborah Van Schelluyne (59103).

THOMPSON, S. A., Washington, D. C.: Dulcimer about 75 or 80 years old (58852, loan).

THOMPSON, W. W., Antigua, British West Indies: About 100 small mollusks, collected on Barbuda Island, West Indies (58683).

THORNBER, Prof. J. J., University of Arizona, Tucson, Ariz.: Living specimen of a plant, *Gasteria nitida*, from Arizona (59556).

THUROW, F. W., Hockley, Tex.: 9 specimens of plants from Texas (59031).

TIDESTROM, IVAR, Bureau of Plant Industry, Washington, D. C.: 596 specimens of plants from the United States, including the types of *Aquilegia pinetorum*, *A. scopulorum* and *Delphinium pinetorum* (58664, 58784, 58830, 58928, 59780, 59828); 167 specimens of plants, mainly ferns, from the United States and Europe (59121, 59910).

TILLINGHAST, Miss EDYTHE, New York City (through Mrs. William E. Fendall, Washington, D. C.): Collection of laces (59362); 31 pieces of jewelry (59459). Loan.

TILLOTSON, Mrs. LILLIAN G. (See under Ransom, Miss Irene, Estate of.)

TOLMAN, R. P., U. S. National Museum: Oil portrait of Albert Pike, by S. Jerome Uhl (59149, loan).

TOMLINSON, W. HAROLD, Swarthmore, Pa.: A 22-gram fragment of the Sams Valley, Jackson County, Oreg., mete-

TOMLINSON, W. HAROLD—Continued. oric iron, and a 10-gram fragment of Grossliebenthal, Odessa, Russia, meteoric stone (58889, exchange).

TORONTO, UNIVERSITY OF, Toronto, Canada: 2 "Grenadier" fishes, *Macrurus bairdii*, and a sculpin, *Myoxocephalus æneus* (59365).

TORRE, Dr. CARLOS DE LA, Havana, Cuba (through Mr. John B. Henderson, Washington, D. C.): 2 swallow-tail butterflies, *Papilio gundlachianus* (59488).

TOWNSEND, Dr. C. H. T., Bureau of Entomology, Washington, D. C.: Snake, *Diadophis*, from the District of Columbia (58759).

TRAIN, PERCY, Manhattan, Nev.: Specimens of the minerals vashegyite and variscite, from near Manhattan (59310).

TREADWELL, Dr. AARON L., Vassar College, Poughkeepsie, N. Y.: 16 identified annelids from the Florida Keys and vicinity, including a cotype of *Metalonome brunnea* (59611, exchange).

TRELEASE, Dr. WILLIAM, University of Illinois, Urbana, Ill.: 461 proofs of illustrations of species of mistletoe, *Phoradendron* (59879).

TRENCHARD, EDWARD, Washington, D. C.: Tortoise-shell snuffbox owned by the Hon. John Barclay, mayor of Philadelphia in 1791, and a fan of Chinese workmanship owned by Mrs. Barclay (59142); collection of relics of Capt. Edward Trenchard, U. S. Navy (1784–1824), and of Rear Admiral Stephen Decatur Trenchard, U. S. Navy (1818–1883), grandfather and father, respectively, of Mr. Trenchard (59150, 59214, 59727). Loan.

TURNAGE, Mrs. NEEDHAM C., Washington, D. C.: Hand-embroidered batiste shirtwaist front (59091).

TURNER, GEORGE B., Washington, D. C.: 3 photographs of Sioux Indians, collected in 1886 (59117).

TURPIN, J. H., Joseph, Tex.: Abnormal egg of a domestic fowl (59192).

UNITED STATES BUNTING CO., Lowell, Mass.: 4 samples of bunting and 2 skeins of yarn used in its manufacture (58981).

UNITED STATES GOVERNMENT EXHIBIT BOARD, PANAMA - PACIFIC INTERNATIONAL EXPOSITION, 1915, San Francisco, Cal.: Group consisting of 3 elk—a bull, a cow and a calf (59544); 160 ethnological objects collected by Mr. John Ogilvie in British Guiana (59567); relief model showing the mineral resources of Alaska (59582); duplicate of the first Langley experimental flying machine, 4 family groups (Eskimo, Carib, Zulu, and Dyak), and 8 village groups (Seminole, Jamamadi, Navaho, Aino, Zulu, Dyak, Samoan and Chippewa) (59732).

UNITED STATES GYPSUM CO., Chicago, Ill.: Various gypsum products (58572, 59578).

UNIVERSITETETS ZOOLOGISKE MUSEUM. (See under Copenhagen, Denmark.)

UNIVERSITY MUSEUM, Philadelphia, Pa. (through Dr. G. B. Gordon, director): Plaster casts of 4 canopic jars, and a plaster cast of an alabaster vase from Honduras (59077, exchange).

UPHAM, E. P., U. S. National Museum: Photograph of Tich-ke-matse, Cheyenne Indian artist, together with 14 of his drawings in color and 5 pencil sketches of Indian subjects made in 1879–1880 (59767).

URITA, T., Kagoshima, Japan: 18 crustaceans, including the types of 3 new species of crabs, from Japan (58629, 59110).

VALENTINE & BENTLEY SILK CO., THE, New York City: 5 samples of printed "Mayflower" silks (59775).

VAN ESELTINE, G. P., Bureau of Plant Industry, Washington, D. C.: 2 specimens of fungi, from Virginia and New York (58593, 58861); 2 specimens of plants from Ontario (58803); 334 specimens of plants from the District of Columbia and vicinity (59369, 59438).

VAUGHAN, Dr. T. WAYLAND. (See under Meinzer, O. E., and Sellards, E. H.)

VERMONT MARBLE CO., Proctor, Vt.: Sawed cube of limestone, received through Ward's Natural Science Establishment, Rochester, N. Y. (58761); 2

VERMONT MARBLE CO.—Continued.
slabs of Tokeen Alaska marble, exhibited at the Panama-Pacific International Exposition (59574).

VICTORIA MEMORIAL MUSEUM, GEOLOGICAL SURVEY OF CANADA, Ottawa, Canada (through Mr. R. A. A. Johnston, mineralogist and curator): 382-gram slice of the Thurlow, Hastings County, Canada, meteoric iron (59924, exchange).

VICTORY SILK CO., Paterson, N. J.: 7 samples of men's silk suitings (58809).

WAGNER, GUS, Clements, Kans.: Blind snake from Texas (59704).

WAGSTAFF, R. O., Sugar Grove, Ohio: Small block of mica, uranium stained, from Kona, N. C. (59155).

WALCOTT, Dr. CHARLES D., Secretary, Smithsonian Institution: 2 specimens of photo-mechanical relief in 2 colors (59235); sepia print of painting on carved wood by Roselino (59392).

WALCOTT, Dr. and Mrs. CHARLES D.: An extensive collection of geological material from the Yellowstone National Park, including siliceous and calcareous sinter, native sulphur, silicified wood and sundry varieties of minerals (59008, collected for the Museum).

WALCOTT, Mrs. CHARLES D., Washington, D. C.: The type and 8 specimens of a new land shell, *Oreohelix yavapai marix*, from Squaw Creek, near the mouth of Galalin Cañon, Mont. (59179); skin of a silver fox from British Columbia (59410); 47 specimens of Chinese painting on pith paper (59422, loan); photograph of George Washington, copied from an engraving made by St. Memin when he was in America (59651); doll of 1860, with brown flowered delaine dress and white flowered calico dress (59860, loan).

WALKER, BRYANT, Detroit, Mich.: 6 specimens, representing 2 species, of pearly fresh-water mussels from Alabama (58824); 2 mollusks, *Quadrula*, collected at Coal Fire Creek, Pickens County, Ala. (59539); 6 mollusks, *Pleurobema georgiana*, from Shoal Creek, St. Clair County, Ala. (59705).

WALKER, D. H., Tonopah, Nev. (through U. S. Geological Survey): 8 specimens of potash-bearing salts and associated rock found in the vicinity of Tonopah (59711).

WALKER MUSEUM. (See under Chicago, University of.)

WALTON, W. R., Bureau of Entomology, Washington, D. C.: 8 flies, Muscoidea, from Mexico, Brazil and California (59504).

WALTZ, R. WITMER, Carlisle, Pa.: Spotted turtle, *Clemmys guttatus*, from Pennsylvania (58557); Spanish silver coin, one real, issued in 1782 (59715).

WAR DEPARTMENT:
Army Medical Museum: Skeletons of 19 mammals, 3 birds and a reptile (58723).

Office of the Chief of Engineers: Specimens of masonry of historic interest, of Mississippi River sand, and specimens from Indian mounds (58699).

WARD, P. H., jr., Philadelphia, Pa.: 142 miscellaneous postage stamps, mainly foreign (58872, exchange); 12 miscellaneous foreign postage stamps (58918).

WARD'S NATURAL SCIENCE ESTABLISHMENT, Rochester, N. Y.: Miscellaneous geological specimens (58762, purchase); 2 mastodon teeth (58897, exchange); 485-gram piece of meteoric iron from Cookeville, Tenn. (59210, exchange); 35-gram specimen of the Whitfield County, Ga., meteorite (59273, exchange); mastodon bones, consisting of a tusk, a femur, a humerus, and a cap (59275, exchange); 11 specimens representing the types of 10 species of fossil insects, from Florissant, Colo. (59319, exchange); 36 grams of the Silver Crown, Wyo., meteoric iron, and 15 grams of the Pillistfer, Russia, meteoric stone (59436, exchange); 5 specimens of serpentine asbestos, 1 each from Wyoming, New Jersey, and Arizona, and 2 from Virginia (59443, purchase); 12 specimens of asbestos and asbestos rock (59449, purchase). (See under Georgia Marble Co., and Vermont Marble Co.)

WARE, ROBERT A., Boston, Mass.: 52 specimens of plants from California (59818).

WASHINGTON, Dr. HENRY S., Geophysical Laboratory, Washington, D. C.: 4 specimens of plants from Mt. Etna, Sicily (59042); specimen of lava with enclosed vitreous masses, from the 1906 eruption of Vesuvius (59068).

WASHINGTON, UNIVERSITY OF, COLLEGE OF MINES, Seattle, Wash. (through Prof. Milnor Roberts, dean): A series of rocks, ores, and minerals, from Washington (59276).

WATKINS, CASIMIR, Arequipa, Peru: 69 specimens of plants from Peru (59922).

WATKINS, GEORGE, Ritta, Fla.: Skin of a round-tailed muskrat, *Neofiber alleni* (58563).

WATSON, Rear Admiral JOHN C., U. S. Navy (retired), Washington, D. C.: Boat flag flown on the gig in which Commander Charles S. Boggs, U. S. Navy, left the gunboat *Varuna*, commanded by him, when that vessel was sunk, below New Orleans, April 24, 1862, during the engagement between a Confederate flotilla and the U. S. fleet commanded by Admiral David G. Farragut (59607).

WEATHERBY, C. A., East Hartford, Conn.: 241 specimens of plants from New England and northern New York (58971, 59625).

WEAVER, Mr. and Mrs. ETHAN ALLEN, Germantown, Pa.: Wooden canteen, leather bullet pouch, 2 powder horns, and a British revenue stamp, of the period of the Revolution (59640).

WEBB, WALTER D., jr., Washington, D. C.: About 75 amphipods collected in Little River, D. C. (58710); 14 anemones, 2 ascidians and an annelid, from Benedict, Md., on the Patuxent River (58800); crustaceans, including about 50 specimens of *Eucrangonyx gracilis* and a specimen of *Hyalella azteca*, and a worm collected near Black Pond, Va. (59254).

WEBB, WALTER F., Rochester, N. Y.: Types of 2 Philippine land shells, *Amphidromus floresi* and *A. maculiferus samarensis* (59718); 16 mollusks, *Pythia pantherinus*, from Hinundayan, southern Leyte, P. I. (58912).

WELCH, Prof. PAUL S., Kansas State Agricultural College, Manhattan, Kans.: 2 specimens (paratypes) of a worm, *Mesenchytræus gelidus*, and 4 specimens (paratypes) of *M. solifugus rainierensis*, from the snow fields of Mount Rainier (59638).

WELLS, JOHN A., Kings Mountain, N. C.: Stone ax, 7 arrowpoints, soapstone tobacco pipe, and half of a pick-shaped stone ornament, found in a field near the old Kings Mountain battle ground (59342).

WETHERILL, IRA CORTRIGHT, Erica, Va.: Small Sun Dance robe of Richard Sanderville, Blackfeet Indian (59472, loan).

WETMORE, A., Bureau of Biological Survey, Washington, D. C.: Trachese of 5 ruddy ducks, *Erismatura jamaicensis* (59632).

WHERRY, Dr. EDGAR T., U. S. National Museum: Snake, *Heterodon platyrhina*, from Chevy Chase, D. C. (58792); 2 specimens of the mineral fuchsite from Chester County, Pa. (58910); mole, *Scalopus* (58996); specimen of a fern, *Asplenium pinnatifidum*, from Virginia (59078); 2 specimens representing 2 new species of fossil plants from the Triassic of Pennsylvania (59311); specimen showing glauberite crystal cavities in shale, from Steinsburg, Pa. (59573); specimen of a plant, *Scutellaria*, from Virginia (59909).

WHITE, HUGH W., Bedford, Va.: Chinese pendant bell-slate tablet carved to represent life forms in outline (59686).

WHITE, JOHN JAY, Washington, D. C.: 30 mounted heads and horns of game animals (58625, loan).

WILCOX, Brig. Gen. TIMOTHY E., U. S. Army (retired), Washington, D. C.: 4 specimens of plants from the District of Columbia and vicinity (58609, 58865, 59351); tooth of an Alaskan moose (58612).

WILDS, F. P. (See under Homer Commutator Co.)

WILLETT, G., Los Angeles, Cal.: 6 shells from Forrester Island, Alaska (59035).

WILLIAMSON, E. B., Bluffton, Ind.: 190 dragonflies from Central and South America and 10 from Texas and Indian Territory (59506, exchange).

WILLIS, JULIAN, Williston, S. C.: Great-horned owl, *Bubo virginianus* (59724).

WILLIS, L. O., New Market, Md.: Beetle, *Hololepta* sp. (59494).

WILMER, Col. L. WORTHINGTON, Lothian House, Ryde, Isle of Wight, England: Collection of fossil and recent shells from the Isle of Wight (58835).

WILSON, EZRA, Brookland, D. C.: Specimen of native silver and 1 of erythrite (59050, purchase).

WILSON, Miss M. L., Haverhill, Mass.: Letter written in 1823 by DeWitt Clinton to his son George, when the latter was a student at Hamilton College, Clinton, N. Y. (58714).

WINECOFF, Dr. THOMAS E., Fort Yukon, Alaska: Fossil ammonite from Porcupine River, northwestern Canada (59595).

WINKLEY, Rev. HENRY W., Danvers, Mass.: About 100 phyllopods, collected from a rain barrel at Danvers (59564).

WOLD, HANS, Christiania, Norway: 3 mounted sea leopards (58676, purchase).

WOODS, WILLIAM COLCORD, Ithaca, N. Y.: 3 parasitic Hymenoptera, *Biosteres rhagoletis*, 2 of them being paratypes (59499).

WOODSIDE, THOMAS W., Auburndale, Mass.: 2 leopard skulls from Bihe, Angola, Africa (59774).

WORCH, HUGO, Washington, D. C.: 4 pianos (58758, loan); 3 pianos—addition to The Hugo Worch Collection (59954).

WREN, CHRISTOPHER, Plymouth, Pa.: Fragments of pottery vessels from various localities in Wyoming Valley, Pa. (58941); 6 stone implements collected by the donor from the valley of the Susquehanna River; and 2 photographs and a drawing of pipes in possession of the donor (59558).

WRIGHT, W. S., San Diego, Cal.: 12 Lepidoptera (59538).

YALE UNIVERSITY, New Haven, Conn.
Peabody Museum of Natural History: Casts of the bones constituting the type specimen of the carnivorous dinosaur *Allosaurus fragilis* (59745, exchange).

YAMAWAKI, H. (See under Japan. His Imperial Japanese Majesty's Commission to the Panama-Pacific International Exposition.)

YELLOWSTONE NATIONAL PARK. (See under Interior, Department of.)

YERKES OBSERVATORY. (See under Chicago, University of.)

YORK, Prof. H. H., Brown University, Providence, R. I.: 50 specimens of plants, *Sphagnum*, from New York and Jamaica (59040, exchange).

YOUNG, Mrs. JOHN RUSSELL, Washington, D. C.: Piece of embroidery (native work of Benares, India), 2 collars of French hand embroidery, pair of tiny gloves (Chinese), photograph of etching by Thomas Moran, and a bronze bust of Oliver Cromwell (59826).

YOUNG, Miss M. V., U. S. National Museum: Four 4-color half-tones, and 3 hand-colored Chinese prints on pith paper (59848).

YOUNG, Prof. R. T., Biological Station, Devils Lake, N. Dak.: Frog, *Rana cantabrigensis*, from Turtle Mountains, N. Dak. (58551).

ZEHNTNER, Dr. LEO, Rio de Janeiro, Brazil: 16 specimens of Cactaceae from Brazil (58963).

ZETEK, JAMES, Ancon, Canal Zone: Marine invertebrates, mammals, birds, reptiles and fishes, from Panama (58724, 59386).

ZIMMERMAN, Mrs. J. E., New York City (through Mrs. Julian-James): Collection of dresses, oriental jewelry, etc. (59339).

ZIMMERMAN, Rev. Jos. A., St. Francis, S. Dak.: 2 teeth of fossil mammals from Rosebud Reservation, S. Dak. (59876).

LIST OF PUBLICATIONS OF THE U. S. NATIONAL MUSEUM ISSUED DURING THE FISCAL YEAR 1915—1916, AND OF PAPERS PUBLISHED ELSEWHERE WHICH RELATE TO THE COLLECTIONS.

PUBLICATIONS OF THE MUSEUM.

ANNUAL REPORT.

Smithsonian Institution | United States National Museum | — | Report on the progress and condition of the United States | National Museum for the | year ending June 30, 1915 | (Seal) | Washington | Government Printing Office | 1916

8vo., pp. 1-215.

PROCEEDINGS.

Smithsonian Institution | United States National Museum | — | Proceedings | of the | United States National Museum | — | Volume 48 | — | (Seal) | Washington | Government Printing Office | 1915

8vo., pp. i-x, 1-672, pls. 1-46, 42 figs.

Smithsonian Institution | United States National Museum | — | Proceedings | of the | United States National Museum | — | Volume 49 | — | (Seal) | Washington | Government Printing Office | 1916

8vo., pp. i-xiv, 1-702, pls. 1-83, 296 figs.

BULLETINS.

Smithsonian Institution. | United States National Museum. | — | Bulletin | of the | United States National Museum. | No. 50. | — | The birds | of | North and Middle America: | By | Robert Ridgway, | Curator, Division of Birds. | — | Part VII. | — | (Seal) | Washington: | Government Printing Office. | 1916.

8vo., pp. i-xiii, 1-543, pls. 1-24.

Smithsonian Institution | United States National Museum | Bulletin 70 | — | The National Gallery of Art | Department of Fine Arts | of the National Museum | By | Richard Rathbun | Assistant Secretary of the Smithsonian Institution, in Charge of the | United States National Museum | (Reprint, 1916, with additions) | (Seal) | Washington | Government Printing Office | 1916

8vo., pp. 1-189, 26 pls.

Smithsonian Institution | United States National Museum | Bulletin 91 | — | Report on the Turton collection of South | African marine mollusks, with additional | notes on other South African shells | contained in the United States | National Museum | By | Paul Bartsch | Curator, Division of Marine Invertebrates | United States National Museum | (Seal) | Washington | Government Printing Office | 1915

8vo., pp. i-xii, 1-305, pls. 1-54.

Smithsonian Institution | United States National Museum | Bulletin 92 | — | Bibliographic index of American | Ordovician and Silurian — fossils | — | Volume 1 | Volume 2 | By | Ray S. Bassler | Curator of Paleontology, United States National Museum | (Seal) | Washington | Government Printing Office | 1915

Vol. 1, 8vo., pp. i-viii, 1-718; Vol. 2, 8vo., pp. i-iv, 719-1521, pls. 1-4.

Smithsonian Institution | United States National Museum | Bulletin 94 | — | Handbook and descriptive catalogue of | the meteorite collections in the | United States National Museum | By | George P. Merrill | Head Curator of Geology, United States National Museum | (Seal) | Washington | Government Printing Office | 1915

8vo., pp. i-x, 1-207, pls. 1-41.

PAPERS PUBLISHED IN SEPARATE FORM.

FROM VOLUME 49 OF THE PROCEEDINGS.

No. 2092. Descriptive catalogue of the Washington relics in the United States National Museum. By Theodore T. Belote. pp. 1–24, pls. 1–27.

No. 2094. The recent and fossil mollusks of the genus Rissoina from the west coast of America. By Paul Bartsch. pp. 33–62, pls. 28–33.

No. 2095. A revision of the North American Ichneumon flies of the subfamily Opiinae. By A. B. Gahan. pp. 63–95, pls. 34, 35.

No. 2096. Descriptions of two new species of Entomostraca from Colorado, with notes on other species. By G. S. Dodds. pp. 97–102, figs. 1–10.

No. 2097. Flies of the genus Agromyza, related to Agromyza virens. By J. R. Malloch. pp. 103–108, pl. 36, 1 fig.

No. 2098. Notes on the composition and structure of the Indarch, Russia, meteoric stone. By George P. Merrill. pp. 109–112, pl. 37.

No. 2099. The dipterous genus Symphoromyia in North America. By John Merton Aldrich. pp. 113–142, figs. 1–11.

No. 2100. The genera and subgenera of raccoons and their allies. By N. Hollister. pp. 143–150, pls. 38, 39.

No. 2101. Notes on the flies of the genus Pseudodinia, with description of a new species. By J. R. Malloch. pp. 151, 152.

No. 2102. A peculiar oolite from Bethlehem, Pennsylvania. By Edgar T. Wherry. pp. 153–156, pls. 40, 41.

No. 2103. On a collection of Javanese crane-flies (Tipulidae, Diptera) in the United States National Museum. By Charles Paul Alexander. pp. 157–193, pls. 42–50.

No. 2104. The Philippine land shells of the genus Schistoloma. By Paul Bartsch. pp. 195–204, pl. 51.

No. 2105. Descriptions of new species of Hymenoptera. By S. A. Rohwer. pp. 205–249.

No. 2106. Critical notes on the subspecies of the spotted owl, Strix occidentalis (Xantus). By Harry C. Oberholser. pp. 251–257.

No. 2107. Notes on the life history and ecology of the dragonflies (Odonata) of Washington and Oregon. By Clarence Hamilton Kennedy. pp. 259–345, figs. 1–201.

No. 2108. Report on some carbonic acid tests on the weathering of marbles and limestones. By George P. Merrill. pp. 347–349.

No. 2109. A collection of amphibians and reptiles from Gogebic County, Michigan. By Arthur T. Evans. pp. 351–354.

No. 2110. A new restoration of Stegosaurus. By Charles W. Gilmore. pp. 355–357, pl. 52, 1 fig.

No. 2111. A colored drawing of the Medeba mosaic map of Palestine in the United States National Museum. By I. M. Casanowicz. pp. 359–376, pl. 53.

No. 2112. An albino salamander, Spelerpes bilineatus. By Arthur M. Banta and Ross Aiken Gortner. pp. 377–379, pls. 54, 55.

No. 2113. A contribution to the knowledge of the extinct sirenian Desmostylus hesperus Marsh. By Oliver P. Hay. pp. 381–397, pls. 56–58.

No. 2114. Eperetmus, a new genus of Trachomedusae. By Henry B. Bigelow. pp. 399–404, pl. 59.

No. 2115. New neotropical muscoid flies. By Charles H. T. Townsend. pp. 405–440.

No. 2116. A review of some bivalve shells of the group Anatinacea from the west coast of America. By William Healey Dall. pp. 441–456.

No. 2117. A new crustacean, Diaptomus virginiensis, and a description of Diaptomus tyrelli Poppe. By C. Dwight Marsh. pp. 457–462, figs. 1–7.

No. 2118. Notes on allophanite, fuchsite, and triphylite. By Edgar T. Wherry. pp. 463–467.

No. 2119. British fossil insects. By T. D. A. Cockerell. pp. 469–499, pls. 60–65.

No. 2120. On the fore limb of Allosaurus fragilis. By Charles W. Gilmore. pp. 501–513, figs. 1–7.

No. 2121. A synopsis of the races of the crested tern, Thalasseus bergii (Lichtenstein). By Harry C. Oberholser. pp. 515–526, pl. 66.

No. 2122. Three new species of Anodontites from Brazil. By William B. Marshall. pp. 527–529, pls. 67–69.

No. 2123. An account of the crustacea collected by the Walker Expedition to Santa Marta, Colombia. By A. S. Pearse. pp. 531–556, pls. 70–73, figs. 1–9.

No. 2124. Notes on the species of the molluscan subgenus Nucella inhabiting the northwest coast of America and adjacent regions. By William Healey Dall. pp. 557–572, pls. 74, 75.

No. 2125. Notes on a collection of fishes made by Dr. Edgar A. Mearns from rivers tributary to the Gulf of California. By John Otterbein Snyder. pp. 573–586, pls. 76, 77.

No. 2126. New fresh-water shells from the Ozark Mountains. By Anson A. Hinkley. pp. 587–589, pl. 78.

No. 2127. Osteology of Thescelosaurus, an orthopodous dinosaur from the Lance formation of Wyoming. By Charles W. Gilmore. pp. 591–616, pls. 79–82, figs. 1–20.

No. 2128. Diagnoses of new genera of muscoid flies founded on old species. By Charles H. T. Townsend. pp. 617–633.

No. 2129. The Euphausiacean crustaceans of the "Albatross" expedition to the Philippines. [Scientific results of the Philippine cruise of the Fisheries steamer "Albatross," 1907–1910.—No. 33.] By H. J. Hansen. pp. 635–654, pl. 83.

No. 2130. The genera of the tettiginiid insects of the subfamily Rhaphidophorinae found in America north of Mexico. By A. N. Caudell. pp. 655–690, figs. 1–28.

FROM VOLUME 50 OF THE PROCEEDINGS.

No. 2131. Nematode parasites of mammals of the orders Rodentia, Lagomorpha, and Hyracoidea. By Maurice C. Hall. pp. 1–258, pl. 1, figs. 1–290.

No. 2132. A generic revision of the American moths of the subfamily Hypeninae, with descriptions of new genera and species. By William Schaus. pp. 259–399.

No. 2133. Fishes collected by the United States Bureau of Fisheries steamer "Albatross" during 1888, between Montevideo, Uruguay, and Tome, Chile, on the voyage through the Straits of Magellan. By Will F. Thompson. pp. 401–476, pls. 2–6.

No. 2134. North American collembolous insects of the subfamilies Achorutinae, Neanurinae, and Podurinae. By Justus W. Folsom. pp. 477–525, pls. 7–25.

No. 2135. New species of crabs of the families Inachidæ and Parthenopidæ. [Scientific results of the Philippine cruise of the Fisheries steamer "Albatross," 1907–1910. — No. 34.] By Mary J. Rathbun. pp. 527–559.

No. 2136. Revision of the parasitic hymenopterous insects of the genus Aphycus Mayr, with notice of some related genera. By P. H. Timberlake. pp. 561–640, pls. 26–31.

No. 2137. Description of two new species of fossil turtles, from the Lance formation of Wyoming. By Charles W. Gilmore. pp. 641–646, pls. 32–35.

No. 2138. Description of three species of crabs (Oxyrhyncha) from the eastern coast of North America. By Mary J. Rathbun. pp. 647–652, pl. 36.

FROM VOLUME 16 OF CONTRIBUTIONS FROM THE NATIONAL HERBARIUM.

Part 14. Plant records of an expedition to Lower California. By Edward A. Goldman. pp. i–xiii, 309–371, pls. 104–133, 1 map.

FROM VOLUME 17 OF CONTRIBUTIONS FROM THE NATIONAL HERBARIUM.

Part 6. Tropical North American species of Panicum. By A. S. Hitchcock and Agnes Chase. pp. i–xii, 459–539, figs. 11–149.

Part 7. Studies of tropical American ferns—No. 6. By William R. Maxon. pp. i–viii, 541–608, pls. 32–43.

Part 8. Branching and flowering habits of cacao and patashte. By O. F. Cook. pp. i–ix, 609–625, pls. 44–54.

FROM VOLUME 18 OF CONTRIBUTIONS FROM THE NATIONAL HERBARIUM.

Part 3. Studies of tropical American phanerogams—No. 2. By Paul C. Standley. pp. i–x, 87–142.

Part 4. New or noteworthy plants from Colombia and Central America—5. By Henry Pittier. pp. i–ix, 143–171, pls. 57–80, figs. 88–97.

CLASSIFIED LIST OF PAPERS BASED WHOLLY OR IN PART ON THE NATIONAL COLLECTIONS.[1]

MUSEUM ADMINISTRATION.

RATHBUN, RICHARD. Report on the progress and condition of the United States National Museum for the year ending June 30, 1915.

8vo., pp. 1-215, Feb. 12, 1916.

FINE ARTS.

Catalogue of a collection of eighty-two drawings in pencil, pen, charcoal, chalk, crayon and water color, executed by eminent contemporary French artists and presented to the people of the United States by the citizens of the French Republic as a token of their appreciation of the sympathetic efforts of American citizens toward relieving the distress occasioned by the European war.

City of Washington, Nov., 1915. 12 mo., 8 pp. and paper cover.

This recent notable addition to the National Gallery of Art is installed in the northern end of the main north hall of the new building of the U. S. National Museum. The pictures are all inscribed and signed by the artists.

RATHBUN, RICHARD. The National Gallery of Art. Department of Fine Arts of the National Museum.

Bull. U. S. Nat. Mus., No. 70, Jan., 1916, pp. 1-180, 26 pls.

A reprint of the 1909 edition of Bulletin 70, descriptive of the collections of the National Gallery of Art, including all objects added to the Gallery up to January 1, 1916.

ANTHROPOLOGY.

BELOTE, THEODORE T. Descriptive catalogue of the Washington relics in the United States National Museum.

Proc. U. S. Nat. Mus., 49, No. 2092, Oct. 19, 1915, pp. 1-34, pls. 1-27.

A detailed description of the Washington relics in the Museum, with data on the history of the objects.

CASANOWICZ, I. M. A colored drawing of the Medeba mosaic map of Palestine in the United States National Museum.

Proc. U. S. Nat. Mus., 49, No. 2111, Aug. 23, 1915, pp. 359-376, pl. 53.

A sketch of the history of the town of Medeba; an account of the discovery of the map, which is inlaid in the floor of a building; a description of its archeological and artistic features; a transcription of the inscriptions which are in Greek; and an identification of the place names embodied in it.

An abstract of the paper, under the same title, appeared in *Art and Arch.*, 3, No. 3, Mar., 1916, pp. 175-178, 1 fig.

HOES, Mrs. ROSE GOUVERNEUR. Catalogue of American historical costumes, including those of the mistresses of the White House as shown in the United States National Museum.

Washington, D. C., 1915, pp. 1-76, 20 pls.

This catalogue, although privately published, treats exclusively of exhibits installed in the National Museum. The contents comprise a foreword by Mrs. Cassie Mason Myers Julian-James, a catalogue of the numerous articles pertaining to the costumes and their installation, and of a large number of other articles relating to historical costumes assembled in adjoining cases. Photographic reproductions of twenty costumed figures are included.

HOLMES, WILLIAM H. Dighton Rock.

Art and Arch., 3, No. 1, Jan., 1916, pp. 53-55, 1 pl.

Dighton Rock is a mass of conglomerate outcropping on the bank of Taunton River, Mass., one face of

[1] A few papers published prior to this fiscal year are included, having been inadvertently omitted from previous reports.

HOLMES, WILLIAM H.—Continued.

which is covered with Indian petroglyphs. The engraved figures are described and the various attempts to read them as archaic alphabetic records are recounted. It is stated, however, that they cannot be read and that there is no question as to their place as Indian pictographs, and that save in so far as the rude drawings of men and animals may be interpreted no interpretation is possible.

——— Masterpieces of aboriginal American art: 4. Sculpture in the round.

Art and Arch., 3, No. 2, Feb., 1916, pp. 71–85, pls. 1–5, figs. 1–12.

The masterpiece in art is regarded not as the highest achievement of the whole world of art but as the highest achievement of a particular people or period, so that there may be masterpieces of varying degrees of artistic merit. The best work of the American aborigines, although taking a high place in the scale of world art, cannot compare favorably with the masterpieces of Greek or Roman art. The more advanced American peoples were, however, master carvers in wood and stone and countless examples that challenge our admiration are found among the ruins of the ancient cities of Middle America. The works of the Aztecs and Mayas especially are described, illustrated and compared, and their position in the scale of world art indicated.

——— The oldest dated American monument: A nephrite figurine from Mexico.

Art and Arch., 3, No. 5, May, 1916, pp. 275–278, pls. 1, 2, 1 fig.

This statuette was plowed up by a farmer near San Andres, Tuxtla, Vera Cruz, Mexico, in 1903, and some years later was added to the collections of the National Museum. The figure is of grayish-green nephrite somewhat conical in shape and 6½ inches in height. It is carved to represent a man-bird concept, the head of the man appearing at the top while the remainder of the figure exhibits the back, wings, legs, and feet of a bird in relief. Glyphic inscriptions finely carved occupy the front, sides and back of the figure. The inscription on the front is a date, and as read by Morley, corresponds to 100 B. C. of our calendar. The next earliest date thus far read corresponds to

HOLMES, WILLIAM H.—Continued.

60 A. D., and is inscribed on a small object of jade known as the "Leyden stone."

——— Examples of spurious antiquities: 1. Guatemalan pottery.

Art and Arch., 3, No. 5, May, 1916, pp. 287, 288, 1 pl., 1 fig.

The prevalence of the manufacture of and the trade in spurious antiquities is dwelt upon and the difficulty of determining the fraudulent work in any particular field, even by the expert, is stated. During the writer's recent visit to Guatemala special effort was made to learn definitely the origin of certain skillfully modeled clay figurines and other objects which have been acquired in the United States from Guatemala as genuine antiquities. Although the factory in which these articles are produced was not visited, it was definitely learned that they are the product of the genius of an Italian sculptor, resident in Guatemala City.

HOUGH, WALTER. Man and metals.

Proc. Nat. Acad. Sci., 2, No. 3, Mar., 1916, pp. 123–129.

A condensed paper dealing with the development of metallurgy through successive processes and inventions for applying increased heat in smelting metals and reducing ores.

HRDLIČKA, ALEŠ. The peopling of America.

Bull. Pan Amer. Union, 41, No. 1, July, 1915, pp. 73–78, pls. 1, 2.

This is in the main a reprint of the paper published under the same title in the Journal of Heredity, February, 1915, and deals briefly with the problem of the origin of the American Indians.

——— An exhibit in physical anthropology.

Proc. Nat. Acad. Sci., 1, No. 7, July, 1915, pp. 407–410.

A concise account of the anthropological exhibits prepared by the author for the Panama-California Exposition. These exhibits are housed in four halls, which illustrate, respectively, man's evolution or phylogeny; his development and growth from embryo onward, or ontogeny; his variations; and his physical decline and elimination. They are of

HRDLIČKA, ALEŠ—Continued.

permanent nature and will form a physical anthropology nucleus in the museum of San Diego.

——— A descriptive catalogue of the section of physical anthropology, Panama-California Exposition.

San Diego, 1914 (1915), pp. 1-15.

A detailed description of the exhibits referred to in the preceding title.

——— The old American stock.

Mag. Daughters Amer. Rev., 47, No. 3, Sept., 1915, pp. 168-171.

Describes anthropometric investigations on representations of the oldest American families, conducted by the author during the last three years in his laboratory at the National Museum. The two main objects of these investigations are, first, to ascertain what physical changes, if any, have taken place in the oldest white Americans under the action of the American environment; and second, to establish a series of reliable standards for future comparisons.

——— Evolution of man in the light of recent discoveries and its relation to medicine.

Washington Med. Annals, 14, No. 6, Nov., 1915, pp. 304-307.

A 4-page abstract of a lecture given by the author before a joint meeting of the Washington Medical and Anthropological Societies, October 13, 1915. It outlines the bases on which rest at the present time our knowledge of man's evolution from lower form, and calls attention to the fact that the process is by no means as yet finished and that it bears direct relation to numerous phases of pathology.

——— Brief notes on recent anthropological explorations under the auspices of the Smithsonian Institution and the United States National Museum.

Proc. Nat. Acad. Sci., 2, No. 1, Jan., 1916, pp. 33-37.

A brief account of seven expeditions made by or under the direction of the author between 1912 and 1915, in connection with the preparation of the exhibits for the Panama-California Exposition. The expeditions were: (1) To the mound region of Southwest Russia; (2) to the Biruss caves and rock shelters on the Yenisei River, Siberia; (3) to the Southern Siberians and the Mongolians; (4) to Eastern Siberian tribes; (5) to the Philippine Island Negrito; (6) to the St. Lawrence Island Eskimo; and (7) to the African Negro and Bushman.

HRDLIČKA, ALEŠ—Continued.

——— The most ancient skeletal remains of man.

Smithsonian Inst. Special Pub. No. 2300, May 13, 1916, pp. 1-63, pls. 1-41, figs. 1-12.

A new edition, brought up to date, of the paper under the same title published in the Annual Report of the Smithsonian Institution for 1913. The interest in the subject of man's antiquity is such that the first edition was soon exhausted; and as important developments have recently taken place in connection with the Piltdown and other finds, it was thought advisable to prepare a second edition, the object of which is to give reliable and as far as possible first-hand information on the oldest and best authenticated skeletal remains of man and his precursors.

——— Physical anthropology of the Lenape or Delawares, and of the Eastern Indians in general.

Bull. 62, Bur. Amer. Eth., May 1, 1916, pp. 1-130, pls. 1-29, 1 map.

A detailed report on a large, valuable and carefully made collection of Lenape (Munsee) skeletal material donated to the U. S. National Museum by Mr. George C. Heye in 1914; and on the crania of the Eastern Indians in general. The results of these studies are of more than ordinary interest. It appears that the Indians of the entire region east of the Appalachians and Alleghenies, down to North Carolina, were of the same fundamental physical type, and doubtless of one derivation. The Lenape, barring the effects of admixture, show a thorough harmony with the neighboring tribes. The most remarkable fact however which appears to be established by these studies, is that the Iroquois, who spoke a different language and were regarded as distinct people from the Algonquins, show the same type of skull and skeleton with the latter

HRDLIČKA, ALEŠ—Continued.

and are doubtless of the same origin. Many interesting and unexpected results were derived from the study of the smaller bones of the skeletons of this collection.

JUDD, NEIL M. Archeological reconnoissance in western Utah.

Smithsonian Misc. Colls., 66, No. 3, May 27, 1916, pp. 64-71, figs. 79-86.

The author's preliminary examination of the archeological remains in western Utah shows that at least three distinct types of prehistoric habitations formerly existed; that artifacts found in the two types first mentioned indicate a close cultural affinity between their builders, and that the second and third types possess many characteristics in common, together with an unmistakable cultural relationship with the pre-Pueblo an ruins scattered widely throughout the Southwest.

PHILATELY.

LEAVY, JOSEPH B. The United States Government collection of postage stamps.

The Philat. Gaz., 5, No. 8, Aug., 1915, pp. 177-180; 5, No. 9, Sept., 1915, pp. 205-209; 5, No. 10, Oct., 1915, pp. 229-231; 5, No. 11, Nov., 1915, pp. 257-261; 5, No. 12, Dec., 1915, pp. 285-289; 6, No. 1, Jan., 1916, pp. 1-4; 6, No. 2, Feb., 1916, pp. 33-37; 6, No. 3, Mar., 1916, pp. 65-69; 6, No. 4, Apr., 1916, pp. 100-103; 6, No. 6, June, 1916, pp. 190, 191.

The continuation of a complete and detailed list of stamps of the United States and possessions now on exhibition in the U. S. National Museum collection. This list, taking up the stamps of the various foreign countries in the order of installation, was begun in 1914 and is to be continued during the coming year.

LEAVY, JOSEPH B.—Continued.

——— New issue notes.

The Philat. Gaz., 5, No. 8, Aug., 1915, pp. 198-200; 5, No. 10, Oct., 1915, pp. 251-254; 5, No 12, Dec., 1915, pp. 307, 308; 6, No. 1, Jan., 1916, pp. 20, 21; 6, No. 3, Mar., 1916, pp. 88-90; 6, No. 6, June, 1916, pp. 187, 188.

A series of notes on new issues of foreign stamps received from the Universal Postal Union at Berne, Switzerland, through the Post Office Department. They are based entirely on material in the U. S. National Museum.

MAMMALS.

ALLEN, GLOVER M. Bats of the genus Corynorhinus.

Bull. Mus. Comp. Zoöl., 60, No. 9, Apr., 1916, pp. 333-356, 1 pl.

The type of *Corynorhinus mexicanus*, a new subspecies, is in the U. S. National Museum.

ALLEN, J. A. Notes on American deer of the genus Mazama.

Bull. Amer. Mus. Nat. Hist., 34, Art. 18, Nov. 2, 1915, pp. 521-553.

——— The neotropical weasels.

Bull. Amer. Mus. Nat. Hist., 35, Art. 12, Apr. 28, 1916, pp. 89-111.

ALLEN, J. A. List of mammals collected in Colombia by the American Museum of Natural History expeditions, 1910-1915.

Bull. Amer. Mus. Nat. Hist., 35, Art. 18, May 31, 1916, pp. 191-238, 1 map.

ANTHONY, H. E. Panama mammals collected in 1914-1915.

Bull. Amer. Mus. Nat. Hist., 35, Art. 20, June 9, 1916, pp. 357-371, figs. 1-6, including map.

BAILEY, VERNON. Revision of the pocket gophers of the genus Thomomys.

North Amer. Fauna, No. 39, Nov. 15, 1915, pp. 1–136, pls. 1–8, figs. 1–10, including 6 maps.

Describes as new, *Thomomys sheldoni*, of which the type is in the U. S. National Museum.

CLARK, AUSTIN H. Two interesting mammals from the island of Tobago, West Indies.

Ann. Mag. Nat. Hist., 8th Ser., 13, Jan., 1914, pp. 68–70.

Marmosa tobagi Thomas and *Dasypus novemcinctus hoplites* G. M. Allen, the latter now recorded from Tobago for the first time.

GOLDMAN, E. A. Notes on the genera Isothrix Wagner and Phyllomys Lund.

Proc. Biol. Soc. Washington, 29, June 6, 1916, pp. 125, 126.

——— The status of Sigmodontomys alfari Allen and Oryzomys ochraceus Allen.

Proc. Biol. Soc. Washington, 29, June 6, 1916, p. 127.

HOLLISTER, N. The genera and subgenera of raccoons and their allies.

Proc. U. S. Nat. Mus., 49, No. 2100, Aug. 13, 1915, pp. 143–150, pls. 38, 39.

The new genus *Nasuella* is described.

——— The specific name of the striped muishond of South Africa.

Proc. Biol. Soc. Washington, 28, Nov. 29, 1915, p. 184.

——— Descriptions of a new genus and eight new species and subspecies of African mammals.

Smithsonian Misc. Colls., 66, No. 1, Feb. 10, 1916, pp. 1–8.

New genus: *Cercoctenus*. New species and subspecies: *Surdisorex polulus*, *Rhinolophus keniensis*, *Eptesicus ugandæ*, *Cheirephon pumilus nairobæ*, *Genetta pumila*, *Mungos sanguineus parvipes*, *M. albicaudus dialeucos*, *Helogale undulata affinis*.

HOLLISTER, N. Three new African shrews of the genus Crocidura.

Smithsonian Misc. Colls., 66, No. 8, May, 1916, pp. 1–3.

Describes the following new species and subspecies: *Crocidura daphnia*, *C. parvipes nisa*, *C. simiolus*.

——— The generic names Epimys and Rattus.

Proc. Biol. Soc. Washington, 29, June 6, 1916, p. 126.

Rattus is shown to be the correct generic name for the rats.

——— A systematic account of the prairie-dogs.

North Amer. Fauna, No. 40, June 20, 1916, pp. 1–37, pls. 1–7, figs. 1, 2.

Describes the new subgenus *Leucocrossuromys*, and new subspecies *Cynomys gunnisoni zuniensis*.

HOWELL, ARTHUR H. Description of a new pine mouse from Florida.

Proc. Biol. Soc. Washington, 29, Apr. 4, 1916, pp. 83, 84.

The type of this new species, *Pitymys parvulus*, is in the U. S. National Museum.

JACKSON, HARTLEY H. T. A review of the American moles.

North Amer. Fauna, No. 38, Sept. 30, 1915, pp. 1–100, pls. 1–6, figs. 1–27.

Scapanus orarius schefferi is described as new. The type is in the U. S. National Museum.

——— A new bat from Porto Rico.

Proc. Biol. Soc. Washington, 29, Feb. 24, 1916, pp. 37, 38.

Describes *Eptesicus wetmorei*, a new species. The type is in the U. S. National Museum.

LYON, MARCUS WARD, jr. A porcupine skull with a pair of supernumerary well developed incisors in the upper jaw.

Anat. Record, 10, No. 6, Apr., 1916, pp. 459–462, 1 fig.

MILLER, GERRIT S., jr. Expedition to Borneo and Celebes.

Smithsonian Misc. Colls., 65, No. 6, July 2, 1915, pp. 20-25, figs. 19-24.

Account of work by Mr. H. C. Raven in 1914 under the auspices of Dr. W. L. Abbott. Photographs of pangolin and *Gymnura*.

——— The jaw of the Piltdown man.

Smithsonian Misc. Colls., 65, No. 12, Nov. 24, 1915, pp. 1-31, pls. 1-5, 1 fig.

The jaw hitherto associated with the skull of the Piltdown man is regarded as that of a new species of Pleistocene chimpansee, *Pan vetus*.

——— Note on the indigenous rodent of Santo Domingo.

Proc. Biol. Soc. Washington, 29, Feb. 24, 1916, p. 47.

Rediscovery of *Plagiodontia aedium*.

——— Remains of two species of Capromys from ancient burial sites in Jamaica.

Proc. Biol. Soc. Washington, 29, Feb. 24, 1916, p. 48.

——— Expedition to Borneo and Celebes.

Smithsonian Misc. Colls., 66, No. 3, May 27, 1916, pp. 41-44, figs. 53-57.

An account of work by Mr. H. C. Raven in 1915 under the auspices of Dr. W. L. Abbott. Photographs of Celebean lemur and skull of babirusa.

——— Explorations in China and Manchuria.

Smithsonian Misc. Colls., 66, No. 3, May 27, 1916, pp. 44-46, fig. 58.

Account of work by Mr. Arthur de C. Sowerby in 1915. Photograph of skull of *Budorcas bedfordi* not hitherto figured.

MILLER, GERRIT S., jr.—Continued.

——— Work by Copley Amory, jr., in eastern Siberia.

Smithsonian Misc. Colls., 66, No. 3, May 27, 1916, pp. 46-51, figs. 59-66.

Photograph of skull of east Siberian moose.

OSGOOD, WILFRED H. New mammals from Brazil and Peru.

Field Mus. Nat. Hist., Pub. 185, *Zool. Ser.*, 10, No. 13, Oct. 22, 1915, pp. 187-198.

TAYLOR, WALTER P. Description of a new subgenus (Arborimus) of Phenacomys, with a contribution to knowledge of the habits and distribution of Phenacomys longicaudus True.

Proc. Cal. Acad. Sci., 4th Ser., 5, No. 5, Dec. 30, 1915, pp. 111-161, pl. 15, figs. 1-4.

——— The status of the beavers of western North America, with a consideration of the factors in their speciation.

Univ. Cal. Pub. Zool., 12, No. 15, Mar. 20, 1916, pp. 413-496, figs. A-Q.

The type of *Castor subaquatus shastensis*, a new subspecies, is in the U. S. National Museum.

——— Two new Aplodontias from western North America.

Univ. Cal. Pub. Zool., 12, No. 16, May 6, 1916, pp. 497-501.

Describes *Aplodontia rufa grisea* and *A. californica columbiana*.

BIRDS.

BANGS, OUTRAM. (See under John E. Thayer.)

BROOKS, W. SPRAGUE. Notes on birds from east Siberia and arctic Alaska.

Bull. Mus. Comp. Zoöl., 59, No. 5, Sept., 1915, pp. 361-413, figs. 1, 2.

Notes on 160 species and subspecies, of which 5 are described as new.

CHAPIN, JAMES P. Four new birds from the Belgian Congo.

Bull. Amer. Mus. Nat. Hist., 35, Art. 3, Feb. 21, 1916, pp. 23-29, figs. 1-4.

CHAPMAN, FRANK M. Diagnoses of apparently new Colombian birds. IV.

Bull. Amer. Mus. Nat. Hist., 34, Art. 23, Dec. 30, 1915, pp. 635-662.

Twenty-five new species and subspecies are described, and some notes are offered on the northern forms of *Phrygilus unicolor*.

CHERRIE, GEORGE K. Some apparently undescribed birds from the collection of the Roosevelt South American expedition.

Bull. Amer. Mus. Nat. Hist., 35, Art. 17, May 20, 1916, pp. 183-190.

COOKE, WELLS W. Distribution and migration of North American gulls and their allies.

Bull. U. S. Dept. Agric., No. 292, Oct. 25, 1915, pp. 1-70, figs. 1-31.

An account of the distribution and migration of the thirty species of gulls and jægers of North America.

CORY, CHARLES B. Notes on South American birds, with descriptions of new subspecies.

Field Mus. Nat. Hist., Pub. 183, Ornith. Ser., 1, No. 9, Aug. 7, 1915, pp. 303-335.

The author gives keys to the subspecies of *Chrysoptilus punctigula* and to the South American forms of the genus *Pisoy*, with a revision of the sparrow hawks of South America. Twelve new subspecies of various families are described.

GRINNELL, JOSEPH. A distributional list of the birds of California.

Pacific Coast Avifauna, No. 11, Oct. 21, 1915, pp. 1-217, pls. 1-3, including 2 maps.

A list of 541 species and subspecies ascertained to occur within the limits of the State, with the synonyms and status of each. A hypothetical list of 61 species is added.

HARPER, FRANCIS. (See under Robert Cushman Murphy.)

MEARNS, EDGAR A. Descriptions of seven new subspecies and one new species of African birds (plantain-eater, courser, and rail).

Smithsonian Misc. Colls., 65, No. 13, Nov. 26, 1915, pp. 1-9.

A key to the subspecies of *Turacus hartlaubi* is given, and *T. h. medius*, *T. h. crissalis*, and *T. h. cærulescens* are introduced as new subspecies. Other new forms are *Corythæola cristata yalensis*, *Cursorius gallicus meruensis*, *C. temminckii jebelensis*, *Rhinoptilus africanus rafferty*, and *Sarothrura lorings*.

MEARNS, EDGAR A. The occurrence of the western house wren on Smith's Island, Northampton County, Virginia.

Auk, 33, No. 2, Apr., 1916, p. 203.

Records the capture of *Troglodytes ædon parkmani* in Virginia.

——— Description of a new subspecies of the American least tern.

Proc. Biol. Soc. Washington, 29, Apr. 4, 1916, pp. 71, 72.

Sterna antillarum browni is a new subspecies from the Pacific coast.

MILLER, W. DE WITT. Three new genera of birds.

Bull. Amer. Mus. Nat. Hist., 34, Art. 17, Oct. 20, 1915, pp. 515-520.

MOWBRAY, LOUIS L. (See under John T. Nichols.)

MURPHY, ROBERT CUSHMAN, and FRANCIS HARPER. Two new diving petrels.

Bull. Amer. Mus. Nat. Hist., 35, Art. 7, Apr. 1, 1916, pp. 65-67.

Pelecanoides urinatrix chathamensis and *P. georgica* are described as new, the type of the former being in the U. S. National Museum collection.

NICHOLS, JOHN T., and LOUIS L. MOWBRAY. Two new forms of petrels from the Bermudas.

Auk, 33, No. 2, Apr., 1916, pp. 194, 195.

OBERHOLSER, HARRY C. Critical notes on the subspecies of the spotted owl, Strix occidentalis (Xantus).

Proc. U. S. Nat. Mus., 49, No. 2106, July 26, 1915, pp. 251-257.

The four currently recognised subspecies are reduced to two, *S. o. caurina* and *S. o. huachucæ* becoming synonyms of *S. o. occidentalis* and *S. o. lucida*, respectively.

——— A synopsis of the races of the crested tern, Thalasseus bergii (Lichtenstein).

Proc. U. S. Nat. Mus., 49, No. 2121, Dec. 23, 1915, pp. 515-526, pl. 66.

Eleven subspecies are recognised and briefly reviewed.

PHILLIPS, JOHN C. Some birds from Sinai and Palestine.

Auk, 33, No. 3, July, 1915, pp. 273–289, pl. 17.

Notes on a collection of 90 species and subspecies from this region.

RICHMOND, CHAS. W. Notes on several preoccupied generic names (Aves).

Proc. Biol. Soc. Washington, 28, Nov. 29, 1915, p. 180.

Thermochalcis, *Orestriccus*, *Oberholseria*, *Compsothraupis* and *Odontorchilus* are substitute names for *Stenopsis* Cassin, *Oreomyias* Berlepsch, *Orcospiza* Ridgway, *Lamprotes* Swainson and *Odontorhynchus* Pelzeln, respectively.

——— Note on the generic name Bolborhynchus Bonaparte.

Proc. Biol. Soc. Washington, 28, Nov. 29, 1915, p. 183.

The genotype of *Bolborhynchus* is shown to be *Psittacula lineola* Cassin, *Grammopsittacus* Ridgway becoming a synonym. *Asmoropsittacus* is proposed as a new generic name for *Arara aymara* D'Orbigny.

——— An early record of American scoter for California.

Condor, 18, No. 2, Mar. 30, 1916, p. 83.

RIDGWAY, ROBERT. A new pigeon from Jamaica.

Proc. Biol. Soc. Washington, 28, Nov. 29, 1915, p. 177.

Chloroenas inornata exigua is diagnosed as new.

——— The birds of North and Middle America: a descriptive catalogue of the higher groups, genera, species, and subspecies of birds known to occur in North America, from the arctic lands to the Isthmus of Panama, the West Indies and other islands of the Caribbean Sea, and the Galapagos Archipelago. Part VII. Family Cuculidæ. Family Psittacidæ. Family Columbidæ.

Bull. U. S. Nat. Mus., No. 50, Pt. VII, May 5, 1916, pp. i–xiii, 1–543, pls. 1–24.

The groups treated in the present volume comprise the orders Coccygiformes, Psittaciformes, and Columbiformes, embracing 3 families, 44 genera and 208 species, with numerous additional extra-limital genera and species diagnosed in the keys. *Œnas plumbea chapmani* and *Zenaidura macroura caurina* are described as new.

RIDGWAY, ROBERT—Continued.

RILEY, J. H. Descriptions of three new birds from China and Japan.

Proc. Biol. Soc. Washington, 28, Sept. 21, 1915, pp. 161–164.

——— Note on Chlorostilbon puruensis.

Proc. Biol. Soc. Washington, 28, Nov. 29, 1915, p. 183.

This species is found to belong to the genus *Chlorestes*.

——— Description of a new hazel grouse from Manchuria.

Proc. Biol. Soc. Washington, 29, Jan. 25, 1916, pp. 17, 18.

Tetrastes bonasia amurensis is a new subspecies.

——— Two new Ralliformes from tropical America.

Proc. Biol. Soc. Washington, 29, June 6, 1916, pp. 103, 104.

Fulica americana grenadensis and *Creciscus murinagans* are described.

ROBINSON, H. C. On birds collected by Mr. C. Boden Kloss, F. R. G. S., M. B. O. U., on the coast and islands of southeastern Siam.

Ibis, Ser. 10, 3, No. 4, Oct., 1915, pp. 718–761.

An account of the species, 100 in number, obtained by Mr. Kloss, with descriptions of 4 new ones.

SHUFELDT, R. W. On the comparative osteology of Orthorhamphus magnirostris (the long-billed stone-plover).

Emu, 15, Pt. 1, July 1, 1915, pp. 1–25, pls. 1–7.

The osteology of this species is discussed, and compared with related birds.

——— On the comparative osteology of the limpkin (Aramus vociferus) and its place in the system.

Anat. Record, 9, No. 8, Aug., 1915, pp. 591–606, figs. 1–16.

An account of the osteology of this species. The limpkins are accorded the rank of a family and are related to the Rallidæ.

SHUFELDT, R. W. Comparative osteology of Harris's flightless cormorant (Nannopterum harrisi).

Emu, 15, Pt. 2, Oct. 1, 1915, pp. 86–114, pls. 15–19.

Describes the osteology of this species and compares it with other cormorants.

——— Comparative osteology of certain rails and cranes, and the systematic positions of the super-suborders Gruiformes and Ralliformes.

Anat. Record, 9, No. 10, Oct., 1915, pp. 731–750, figs. 1–6.

Reviews previous work in these groups, and gives an account of the osteology of *Grus americanus* and other species of the genus.

——— On the position of the Aramidæ in the system.

Auk, 33, No. 1, Jan., 1916, pp. 108–111.

Further notes on the subject.

THAYER, JOHN E., and OUTRAM BANGS. A new song sparrow from Nova Scotia.

Proc. New Engl. Zool. Club, 5, May 29, 1914, pp. 67, 68.

——— A collection of birds from Saghalin Island.

Auk, 33, No. 1, Jan., 1916, pp. 43–48.

A list of 51 species, with notes.

TODD, W. E. CLYDE. Preliminary diagnoses of seven apparently new neotropical birds.

Proc. Biol. Soc. Washington, 28, Nov. 29, 1915, pp. 169, 170.

TODD, W. E. CLYDE. The birds of the Isle of Pines.

Annals Carnegie Mus., 10, Nos. 1 and 2, Jan. 31, 1916, pp. 146–296, pls. 22–27.

An account of the birds of the island, numbering 142 species and subspecies, with many hypothetical species inserted in systematic sequence. A bibliography of 106 titles is appended.

——— Preliminary diagnoses of fifteen apparently new neotropical birds.

Proc. Biol. Soc. Washington, 29, June 6, 1916, pp. 95–98.

The type of one of the new forms, *Falco fusco-caerulescens septentrionalis*, is in the U. S. National Museum.

WETMORE, ALEX. An anatomical note on the genus Chordeiles Swainson.

Proc. Biol. Soc. Washington, 28, Nov. 29, 1915, pp. 175, 176, fig. 4.

Demonstrates the presence of a small gall-bladder in this genus, contrary to the statements of earlier investigators.

——— Birds of Porto Rico.

Bull. U. S. Dept. Agric., No. 326, Mar. 24, 1916, pp. 1–140, pls. 1–10.

An account of the 102 species recorded from the island, with much information on the food of the various species, based chiefly on the author's investigations covering a period of nine months.

WILLETT, GEORGE. Summer birds of Forrester Island, Alaska.

Auk, 32, No. 3, July, 1915, pp. 295–305, pls. 19, 20.

A list of the species observed, with notes.

REPTILES AND BATRACHIANS.

BANTA, ARTHUR M., and ROSS AIKEN GORTNER. An albino salamander, Spelerpes bilineatus.

Proc. U. S. Nat. Mus., 49, No. 2112, Aug. 31, 1915, pp. 377–379, pls. 54, 55.

This albinotic specimen which was colored uniform yellowish orange was collected as a larva in May, 1912. Pl. 54 is a color reproduction of the transformed animal and pl. 55 represents the normal coloration of the species.

BARBOUR, THOMAS. The reptiles and amphibians of the Isle of Pines.

Annals Carnegie Mus., 10, Nos. 1 and 2, Art. 12, Jan. 31, 1916, pp. 297–308, pl. 28.

This paper, which lists 26 species from the Isle of Pines, Cuba, is based in part on the collection in the U. S. National Museum made by Palmer and Riley in 1900.

BARBOUR, THOMAS, and G. KINGSLEY NOBLE. A revision of the lizards of the genus Ameiva.

Bull. Mus. Comp. Zoöl., 59, No. 6, Oct., 1915, pp. 417–479.

The senior author studied part of the material in the U. S. National Museum and had photographs made of 2 of its types. The description of the type of *Ameiva tobagana* (Cope) on pp. 458–460 is by the curator of reptiles in the U. S. National Museum.

——— ——— A revision of the lizards of the genus Cyclura.

Bull. Mus. Comp. Zoöl., 60, No. 4, Feb., 1916, pp. 139–164, pls. 1–15.

The type of 1 of the new species, *Cyclura stejnegeri*, from Mona Island, between Porto Rico and Haiti, is in the U. S. National Museum, No. 28367.

——— and C. T. RAMSDEN. A new anolis from Cuba.

Proc. Biol. Soc. Washington, 29, Jan. 25, 1916, pp. 19, 20.

The new species, *Anolis mestrei*, is represented in the U. S. National Museum by 4 paratypes.

DUNN, E. R. Two new salamanders of the genus Desmognathus.

Proc. Biol. Soc. Washington, 29, Apr. 4, 1916, pp. 75–76.

Desmognathus monticola and *D. ochrophæa carolinensis* are described as new. Types and paratypes of both forms are in the U. S. National Museum.

EVANS, ARTHUR T. A collection of amphibians and reptiles from Gogebic County, Michigan.

Proc. U. S. Nat. Mus., 49, No. 2109, July 26, 1915, pp. 351–354.

Based on a collection from the extreme western end of the upper peninsula of Michigan made during 1913 and 1914 and now in the U. S. National Museum.

GORTNER, ROSS AIKEN. (See under Arthur M. Banta.)

KLOSS, C. BODEN. (See under Malcolm Smith.)

NOBLE, G. KINGSLEY. (See under Thomas Barbour.)

RAMSDEN, C. T. (See under Thomas Barbour.)

SMITH, MALCOLM, and C. BODEN KLOSS. On reptiles and batrachians from the coast and islands of south-east Siam.

Journ. Nat. Hist. Soc. Siam, 1, No. 4, Dec. 15, 1915, pp. 237–249.

The collection was made by Mr. Kloss during December and January, 1914–1915. A set of the specimens was generously presented to the U. S. National Museum through the instrumentality of Dr. W. L. Abbott.

STEJNEGER, LEONHARD. New generic name for a tree-toad from New Guinea.

Proc. Biol. Soc. Washington, 29, Apr. 4, 1916, p. 85.

Nyctimystes is proposed as a new genus, with *N. papua* Boulenger as the type.

——— Notes on amphisbænian nomenclature.

Proc. Biol. Soc. Washington, 29, Apr. 4, 1916, p. 85.

Proposes *Anopsibæna* as a substitute generic name for *Anops* Bell, preoccupied, and *Cadea blanoides* as a new specific name for *C. punctata* (Bell) preoccupied.

VAN DENBURGH, JOHN. Four species of salamanders new to the State of California, with a description of Plethodon elongatus, a new species, and notes on other salamanders.

Proc. Cal. Acad. Sci., 6, No. 7, May 12, 1916, pp. 215–221.

The paper contains several important references to specimens and records in the U. S. National Museum.

FISHES.

BEAN, TARLETON H. Description of a new cisco from Lake Erie.

Proc. Biol. Soc. Washington, 29, Feb. 24, 1916, pp. 25, 26.

Describes *Leucichthys macropterus*, collected by Mr. Phillip H. Hartman in Lake Erie.

COCKERELL, T. D. A. Scales of Panama fishes.

Proc. Biol. Soc. Washington, 28, Sept. 21, 1915, pp. 151–159.

Based on scales taken from Panama Canal Zone fishes collected by Dr. S. E. Meek, Mr. S. F. Hildebrand and others.

RADCLIFFE, LEWIS. The sharks and rays of Beaufort, North Carolina.

Bull. Bur. Fisheries, 34, No. 822, Apr. 6, 1916, pp. 239–284, pls. 38–49, figs. 1–26.

SNYDER, JOHN OTTERBEIN. Notes on a collection of fishes made by Dr. Edgar A. Mearns from rivers tributary to the Gulf of California.

SNYDER, JOHN OTTERBEIN—Continued.

Proc. U. S. Nat. Mus., 49, No. 2125, Dec. 23, 1915, pp. 573–586, pls. 76, 77, 1 fig.

Notropis mearnsi is described as a new species from the Yaqui Basin.

THOMPSON, WILL F. Fishes collected by the United States Bureau of Fisheries Steamer "Albatross" during 1888, between Montevideo, Uruguay, and Tome, Chile, on the voyage through the Straits of Magellan.

Proc. U. S. Nat. Mus., 50, No. 2133, May 20, 1916, pp. 401–476, pls. 2–6.

The following species are described as new: *Idiacanthus retrodorsalis, Agonopsis asperoculis, Notothenia longicauda, N. gilberti, N. latifrons, N. jordani, Symphurus bergi, Laemonema multiradiata.* As joint author with C. H. Gilbert, the following new species are described: *Coryphaenoides ariommus, Nezumia pudens, Coelorhynchus patagoniae, C. chilensis.*

UROCHORDA.

BARTSCH, PAUL. The status of the tunicate genera Appendicularia and Fritillaria.

Proc. Biol. Soc. Washington, 28, Aug. 23, 1915, pp. 145, 146.

BARTSCH, PAUL—Continued.

Proposes *Appendicula* new name for *Appendicularia*, citing *Appendicularia sicula* Fol as hologenotype and proposes *Fritillum* new name for *Fritillaria*, designating *Fritillaria magellanica* Fol as type.

MOLLUSKS.

BARTSCH, PAUL. The recent and fossil mollusks of the genus Rissoina from the west coast of America.

Proc. U. S. Nat. Mus., 49, No. 2094, July 24, 1915, pp. 33–62, pls. 28–33.

Gives a concise review of the history of the various members of this group, presents analytical keys to the subgenera and species of West American *Rissoinas*, figures and gives a fuller diagnosis of several previously recorded species, describes 22 new species and proposes 1 new name, as cited herewith: *Rissoina excolpa, R. pisna, R. fusilla, R. masatlanica, R. helena, R. io, R. dina, R. peninsularis, R. adamsi, R. townsendi, R. barthelowi, R. lapazana, R. kistia, R. burragei, R. nereina, R. pleistocena, R. californica, R. mexicana, R. cleo, R. cerrosensis, R. dalli, R. coronadensis,* and *R. (Folinia) signae*, new name for *R. insignis* De Folin not *R. insignis* Adams and Reeve. The types are in the U. S. National Museum.

——— The Philippine land shells of the genus Schistoloma.

Proc. U. S. Nat. Mus., 49, No. 2104, July 24, 1915, pp. 195–204, pl. 51.

Redescribes the genus *Schistoloma*, grouping the Philippine shells under 2 subgenera—*Schistoloma* and *Hololoma* new subgenus; discusses the geographical distribution of the group

BARTSCH, PAUL—Continued.

and describes the following new subspecies: *Schistoloma* (*Schistoloma*) *alta mindorœnsis*, *S.* (*S.*) *a. romblonensis*, *S.* (*S.*) *a. sibuyanensis*, *S.* (*S.*) *a. pygmæa*, *S.* (*S.*) *mcgregori tablasensis*, *S.* (*S.*) *m. webbi*, *S.* (*Hololoma*) *quadrasi coronensis*. The types are in the U. S. National Museum.

——— Report on the Turton collection of South African marine mollusks, with additional notes on other South African shells contained in the United States National Museum.

Bull. U. S. Nat. Mus., No. 91, July 28, 1915, pp. i-xii, 1-305, pls. 1-54.

This report presents a critical study of a collection of marine mollusks made by Lieut. Col. W. H. Turton, D. S. O., late Royal Engineers, on four visits to Port Alfred, 1902, 1904, 1905 and 1911, staying there altogether sixteen months. It is further enlarged to embrace all the mollusks contained in the U. S. National Museum from the South African faunal area, which series includes some very important shells, namely, Gould's "types," which are given a fuller diagnosis and are now figured for the first time. At the end of the paper is given a list of all the species that have been reported from South Africa not contained in the collection of the U. S. National Museum from that region. Two new genera, 234 new species, 5 new subspecies are described and 2 new names are proposed: *Stylicla africana*, *Actæocina smithi*, *Cylichna africana*, *Haminea alfredensis*, *Ringicula turtoni*, *R. africana*, *Cylindrobulla turtoni*, *Conus lavendulus*, *C. alfredensis*, *Clionella sybaritica*, *C. nereia*, *C. elizabethæ*, *C. turtoni*, *Clavatula halipiez*, *C. habstrepta*, *C. helena*, *Drillia signa*, *D. lara*, *D. halidoma*, *Mangilia dina*, *M. girna*, *M. nisga*, *M. helga*, *M. benjamini*, *M. arata*, *M. eucosmia*, *M. herilda*, *M. nympha*, *M. humerosa*, *Cythara ima*, *Daphnella alfredensis*, *Donovania stimpsoni*, *Cancellaria dalli*, *Marginella eucosmia*, *M. cormia*, *M. turtoni*, *M. cleo*, *M. lepta*, *M. alfredensis*, *M. almo*, *Mitra helena*, *M. ima*, *M. carifa*, *Fasciolaria alfredensis*, *Cominella porcata multilirata*, *C. alfredensis*, *Euthria turtoni*, *Colubraria alfredensis*, *Bullia serpynota*, *B. lara*, *B. alfredensis*, *B. almo*, *Columbella* (*Seminella*) *alfredensis*, *C.* (*Anachis*) *io*, *Murex alfredensis*, *Sistrum alfredensis*, *Epitonium africanum*, *E. aglaia*, *Acrilla thalia*, *Graphis*

BARTSCH, PAUL—Continued.

africana, *Melanella carifa*, *M. icafra*, *M. alfredensis*, *M. iota*, *M. farica*, *M. thalia*, *M. asser*, *M. acrifa*, *M. cifara*, *M. trafca*, *Subeulima magnifica*, *Niso alfredensis*, *Pyramidella* (*Orinella*) *africana*, *P.* (*O.*) *alfredensis*, *P.* (*O.*) *ima*, *P.* (*Actæopyramis*) *norna*, *P.* (*Syrnola*) *pyrrha*, *P.* (*S.*) *agapes* —new name for *Eulimella nitea* Smith —not *Obeliscus* (*Triptychus*) *niveus* Mörch,—*P.* (*S.*) *tarpeia*, *P.* (*S.*) *hera*, *Turbonilla* (*Ptycheulimella*) *erna*, *T.* (*Pseliocyra*) *adaba*, *T.* (*Strioturbonilla*) *secura*—new name for *T. obeliscus* Gould—not *Chemnitzia obeliscus* C. B. Adams,—*T.* (*Pyrgolampros*) *angra*, *T.* (*Pyrgiscus*) *helena*, *T.* (*P.*) *atossa*, *T.* (*P.*) *tritonia*, *T.* (*P.*) *zenobia*, *T.* (*P.*) *maia*, *T.* (*P.*) *tefunta*, *T.* (*P.*) *apsa*, *T.* (*Cingulina*) *aglaia*, *T.* (*C.*) *callista*, *T.* (*Careliopsis*) *carifa*, *T.* (*Mormula*) *cifara*, *Odostomia* (*Odostomella*) *farica*, *O.* (*Eglisa*) *turtoni*, *O.* (*Pyrgulina*) *arfica*, *O.* (*Miraida*) *agana*, *O.* (*Menestho*) *carifa*, *O.* (*M.*) *rifaca*, *O.* (*M.*) *ficara*, *O.* (*Evalea*) *xthra*, *O.* (*E.*) *gea*, *O.* (*E.*) *cifara*, *O.* (*E.*) *acrifa*, *O.* (*Odostomia*) *trafca*, *O.* (*O.*) *icafra*, *Eugyrina gemmifera lepta*, *Nyctilochus alfredensis*, *Amphiperas smithi*, *Triphoris atea*, *T. helena*, *T. smithi*, *T. elsa*, *T. milda*, *T. oreada*, *T. africana*, *T. capensis*, *T. madria*, *T. subita*, *T. nina*, *T. ima*, *Cerithiopsis* (*Cerithiopsis*) *alfredensis*, *C. erna*, *C.* (*Cerithiopsis*) *nina*, *C.* (*C.*) *nisaba*, *C.* (*C.*) *saba*, *Seila alfredensis*, *S. africana*, *S. smithi*, *Eumeta bia*, *Turritella stimpsoni*, *Litorina africana tryphena*, *Cithna africana*, *Alabina alfredensis*, *A. africana*, *Diala africana*, *D. capensis*, *D. almo*, *Heliacus africanus*, *Nodulus africanus*, *Sabanæa pyrrha*, *S. thalia*, *Amphithalamus turtoni*, *A. africanus*, *Alvania nemo*, *A. alfredensis*, *A. almo*, *A. ima*, *Rissoina calia*, *R. eucosmia*, *Micreschia girna*, *M. halia*, *M. helga*, *M. irma*, *Barleeia smithi*, *Fenella almo*, *Assiminea capensis*, *Natica stimpsoni*, *N. alfredensis*, *N. africana*, *N. nemo*, *N. saldontiana*, *Vanikoro africana*, *Phasianella africana*, *Leptothyra africana*, *L. carminea*, *L. alfredensis*, *Clanculus alfredensis*, *Gibbula thalia*, *G. hera*, *G. aglaia*, *G. medusa*, *G. rifaca*, *Calliostoma eucosmia*, *C. africana*, *Cyniaca gloriosa*, *C. alfredensis*, *C. africana*, *Teinostoma alfredensis*, *Vitrinella rifaca*, *V. cifara*, *V. ficara*, *V. facira*, *V.* (*Docomphala*) *arifca*, *Cyclostrema alfredensis*, *Cyclostremella farica*, *C. africana*, *Caporbis*, n. g. *C. africana*, *Pondorbis*, n. g., *P. alfredensis*, *Discopsis alfredensis*, *D. africana*, *D. turtoni*, *Leptogyra africana*, *Haliotis alfredensis*, *Puncturella africana*, *Dino-*

BARTSCH, PAUL—Continued.

pisz gigas alfredensis, Barbatia alfredensis, B. cafria, Atrina alfredensis, Hochstetteria alfredensis, H. paramoea, Philobrya africana, Lima africana, Crenella alfredensis, Modiolaria africana, M. ima, Cuna concentrica, Venericardia africana, Condylocardia io, Cardiopsis alfredensis, Digitaria africana, Diplodonta africana, D. almo, Felaniella alfredensis, Ungulina alfredensis, Scintilla turtoni, Erycina alfredensis, E. ima, E. carifa, E. rifaca, Bornia farica, B. arfica, B. (Pythina) africana, Rochefortia enora, R. elsa, R. milda, R. helena, R. io, R. farma, Lasea turtoni, Circe alfredensis, Anomalocardia alfredensis, Tellina albinella alfredensis, Abra africana, Theora alfredensis, Solen alfredensis, Eastonia africana, Mactra alfredensis, Pholas alfredensis. The types are in the U. S. National Museum collection.

——— Report on Bahama Cerions planted on the Florida Keys.

Carnegie Inst. of Washington, Year Book, No. 14, 1915, pp. 194–196.

Abstract of report on breeding experiments with *Cerions*.

——— An attempt to colonize the tree snail, Liguus fasciatus, at Tortugas.

Carnegie Inst. of Washington, Year Book, No. 14, 1915, pp. 196, 197.

Records an effort to introduce this land shell on the Tortugas, Fla.

——— Marine borers, Naval Station, Pearl Harbor, Hawaii.

Bull. No. 29, Public Works of the Navy. Under the cognisance of the Bureau of Yards and Docks and the Corps of Civil Engineers, U. S. Navy, Mar., 1916, p. 27, 2 illustrations.

Extract from letter of Civil Engineer Samuel Gordon, U. S. N., giving first record of the destructive mollusks belonging to the genera *Martesia, Xylotrya* and *Teredo*, in the Hawaiian Islands, with notes on the habits of these organisms.

——— Experiments with Cerions on the Florida Keys.

Smithsonian Misc. Colls., 66, No. 3, May 27, 1916, pp. 52, 53.

Brief account of this year's report on the ecological experiments with the Bahama *Cerion* colonies planted on the Florida Keys; note on the transplantation of the Florida tree snail, *Liguus fasciatus*, to the Tortugas.

BARTSCH, PAUL—Continued.

DALL, WILLIAM HEALEY. Notes on the West American species of Fusinus.

Nautilus, 29, No. 5, Sept., 1915, pp. 54–57.

Fusinus colpoicus from Guaymas, Mexico; *F. porticus* from Panama; *F. centrifugus* from the Galapagos Islands; and *F.* (?) *occulti* from Mazatlan are described as new. *F. rugosus* Trask, not Lamarck, is renamed *F. traski*, and *F. robustus* Trask, not Beyrich, is renamed *F. monkae*. The types are in the U. S. National Museum.

——— Notes on American species of Mactrella.

Nautilus, 29, No. 6, Oct., 1915, pp. 61–63.

The American species are enumerated and their synonymy is given. *Mactrella elisia* from the west coast of Mexico is described as new. The type is in the National Museum.

——— The Scottish National Antarctic Expedition.

Science (n. s.), 42, No. 1090, Nov. 19, 1915, pp. 731, 732.

Review of the zoological reports on the collections of the expedition, parts II–XX.

——— A review of some bivalve shells of the group Anatinacea from the west coast of America.

Proc. U. S. Nat. Mus., 49, No. 2116, Nov. 27, 1915, pp. 441–456.

The following new species are described, the types being in the National Museum: *Thracia beringi, T. challisiana, T. diegensis, T. colpoica, Cyathodonta dubiosa, C. lucasana, C. pedroana, C. galapagana, C. cruziana, Kennerlyia granulata, K. conveza, K. patagonica, Coelodon radians, Poroadens* (new subgenus of Pandoridae), *P. panamensis, Lyonsia fratalis;* the new name *Lyonsia gouldii* is given to *O. Osteoderma nitidum* Gould not of Fabricius.

——— The international rules of zoological nomenclature, with appendix and summaries of opinions No. 1 to No. 56.

Science (n. s.), 42, No. 1092, Dec. 3, 1915, p. 805.

Note on publications relating to the rules.

DALL, WILLIAM HEALEY. Notes on the species of the molluscan subgenus Nucella inhabiting the northwest coast of America and adjacent regions.

Proc. U. S. Nat. Mus., 49, No. 2124, Dec. 11, 1915, pp. 557-572, pls. 74, 75.

This reviews the synonymy and geographical distribution of the group, describes the species minutely and names new varieties as follows: *Thais* (*Nucella*) *lamellosa* Gmelin, vars. *franciscana*, *hormica*, *neptunea*, *cymica*, and *sitkana*; *T.* (*N.*) *canaliculata* var. *compressa*; *T.* (*N.*) *emarginata* var. *projecta*; all of which are represented by specimens in the U. S. National Museum.

——— Prodrome of a revision of the Chrysodomoid whelks of the Boreal and Arctic region.

Proc. Biol. Soc. Washington, 29, Jan. 25, 1916, pp. 7, 8.

The following are named as new and the type indicated: Sections Sulcosipho, Latisipho, Latifusus, Microfusus, Helicofusus, and Japelion; subgenera *Barbitonia* and *Retifusus*. The material upon which the revision is based is in the U. S. National Museum.

——— Two new bivalve shells from Uruguay.

Nautilus, 29, No. 10, Feb., 1916, pp. 112, 113.

Glycymeris diaphorus and *Cullocardia* (*Agriodesma*) *felipponei* are described as new. The types are in the U. S. National Museum.

——— Notes on the Californian species of Adula.

Nautilus, 30, No. 1, May, 1916, pp. 1-3.

A general revision of the species, showing among other things that the shell commonly cited as *Adula stylina* Carpenter, was described by Philippi sixteen years earlier under the specific name of *californiensis*. The material is in the U. S. National Museum.

DALL, WILLIAM HEALEY. A new species of Onchidiopsis from Bering Sea.

Proc. Acad. Nat. Sci. Phila., May, 1916, pp. 376-378.

Onchidiopsis (*Atlantolimax*) *kamtschatkana* is described as new. The type is in the U. S. National Museum.

HENDERSON, JOHN B. Land-shells from Anafe Hill in the Havana Province, Cuba.

Nautilus, 29, No. 12, Apr., 1916, pp. 135-137.

An account of a day's collecting in the Anafe Hill region, with a list of the species found. This article is based partly on Museum material.

HINKLEY, ANSON A. New fresh-water shells from the Ozark Mountains.

Proc. U. S. Nat. Mus., 49, No. 2126, Dec. 23, 1915, pp. 587-589, pl. 78.

Gives a list of the species of mollusks collected during a two weeks' trip in the Ozark region and describes as new the following species: *Aneulosa arkansensis*, *Pyrgulopsis ozarkensis*, *Somatogyrus crassilabris*. The types are in the U. S. National Museum.

MARSHALL, WILLIAM B. Three new species of anodontites from Brazil.

Proc. U. S. Nat. Mus., 49, No. 2122, Dec. 11, 1915, pp. 527-529, pls. 67-69.

Describes as new the following species: *Anodontites salmonea*, *A. darochai*, *A. aurora*. The types are in the U. S. National Museum.

——— A new genus and species of naiad from the James River at Huron, South Dakota.

Nautilus, 29, No. 12, Apr., 1916, pp. 133-135, pl. 4.

Cokeria, new genus, and *C. southalli*, new species, are described and figured. The type is in the U. S. National Museum.

ONYCHOPHORES.

CLARK, AUSTIN H. A note on the occurrence of Epiperipatus imthurmi (Sclater).

Proc. Biol. Soc. Washington, 28, Nov. 29, 1915, p. 182.

Quotation from a letter from Mr. Gilbert E. Bodkin, government economic biologist for British Guiana, regarding the occurrence of *Epiperipatus imthurmi* (Sclater) in Issororo, British Guiana. Specimens in the U. S. National Museum.

INSECTS.

ALDRICH, JOHN MERTON. The dipterous genus Symphoromyia in North America.

Proc. U. S. Nat. Mus., 49, No. 2099, July 16, 1915, pp. 113-142, figs. 1-11.

Gives key of the species and describes 8 new species.

ALEXANDER, CHARLES PAUL. On a collection of Javanese crane-flies (Tipulidae, Diptera) in the United States National Museum.

Proc. U. S. Nat. Mus., 49, No. 2103, Aug. 13, 1915, pp. 157-193, pls. 42-50.

One new genus, 1 new subgenus, 26 species and 1 new subspecies are described.

BARBER, H. S. Macrosiagon flavipennis in cocoon of Bembex spinolæ.

Proc. Ent. Soc. Washington, 17, No. 4, Dec. 31, 1915, pp. 187, 188.

Contains a record of the parasitism by this adult with reference to the other species of the family which have been reared and the hosts they attack.

CAUDELL, A. N. Three interesting Orthoptera from the vicinity of Washington, D. C.

Proc. Ent. Soc. Washington, 17, No. 4, Dec. 31, 1915, p. 189.

——— The genera of the tettiginiid insects of the subfamily Rhaphidophorinae found in America north of Mexico.

Proc. U. S. Nat. Mus., 49, No. 2130, Jan. 7, 1916, pp. 655-690, figs. 1-28.

Tables of the groups and of the species are given and 2 new genera and 7 new species are described.

CRAWFORD, J. C. A new species of the genus Chalcis.

Insecutor Inscitiæ Menstruus, 3, Nos. 5-7, July 20, 1915, pp. 89, 90.

Describes *C. hammari* from New Mexico.

——— The genus Secodella in North America.

Proc. Ent. Soc. Washington, 17, No. 3, Sept. 18, 1915, pp. 142-144.

Gives a table of species and describes 4 new species.

CRAWFORD, J. C. New North American Hymenoptera.

Insecutor Inscitiæ Menstruus, 3, Nos. 8-10, Dec. 11, 1915, pp. 107-109.

Describes 3 new species.

——— The bee genus Holocopasites Ashmead.

Insecutor Inscitiæ Menstruus, 3, Nos. 8-10, Dec. 11, 1915, pp. 123-126.

Describes 3 new species and gives a table of all known species.

CUSHMAN, R. A. Descriptions of new Ichneumonidæ and taxonomic notes.

Proc. Ent. Soc. Washington, 17, No. 3, Sept. 10, 1915, pp. 132-142.

Describes 1 new genus, 8 new species, and gives a table of the species of the genus *Omorgus*.

——— (See also under S. A. Rohwer.)

DYAR, HARRISON G. Two new Lepidoptera from the Antilles.

Insecutor Inscitiæ Menstruus, 3, Nos. 5-7, July 20, 1915, p. 62.

Describes *Ctenucha hilliana* and *Lactilia portoricensis*.

——— New American Lepidoptera chiefly from Mexico.

Insecutor Inscitiæ Menstruus, 3, Nos. 5-7, July 20, 1915, pp. 79-85.

Describes 1 new genus and 15 new species and contains notes on other species.

——— Pyralidæ of Bermuda.

Insecutor Inscitiæ Menstruus, 3, Nos. 5-7, July 20, 1915, pp. 86-89.

Describes 4 new species with notes on various other species.

——— and FREDERICK KNAB. Notes on the species of Culex of the Bahamas.

Insecutor Inscitiæ Menstruus, 3, Nos. 8-10, Dec. 11, 1915, pp. 112-115.

Describes 1 new species.

——— (See also under Leland O. Howard.)

ELY, CHARLES R. New species of the genus Gracilaria and notes on two species already described.

Insecutor Inscitiæ Menstruus, 3, Nos. 5–7, July 20, 1915, pp. 51–62.

Describes 9 new species.

FOLSOM, JUSTUS W. North American collembolous insects of the subfamilies Achorutinae, Neanurinae, and Podurinae.

Proc. U. S. Nat. Mus., 50, No. 2134, May 31, 1916, pp. 477–525, pls. 7–25.

Tables for the groups and for the species are given and cotypes of 10 of the new species described are in the U. S. National Museum.

GAHAN, A. B. A revision of the North American Ichneumon-flies of the subfamily Opiinae.

Proc. U. S. Nat. Mus., 49, No. 2095, Aug. 23, 1915, pp. 63–95, pls. 34, 35.

Tables for the genera and species and 1 new genus and 19 new species described.

——— (See also under S. A. Rohwer.)

GIRAULT, A. A. A new genus of chalcidine Hymenoptera.

Ent. News, 26, July, 1915, p. 325.

The genus *Hypochalcis* is erected for *Chalcis modestus*.

——— A new genus and species of Trichogrammatidæ from the Philippines.

Can. Ent., 47, No. 7, July 16, 1915, pp. 233, 234.

——— A new species of Pseudomphale from Chile.

Can. Ent., 47, No. 7, July 16, 1915, pp. 234, 235.

——— Four new Encyrtids from Sicily and the Philippines.

The Entomologist, 48, No. 627, Aug., 1915, pp. 184–186.

——— Notes on some chalcidoid Hymenoptera from Java.

Ent. News, 26, Oct., 1915, p. 365.

——— Notes on North American Mymaridae and Trichogrammatidae (Hym.).

Ent. News, 27, No. 1, Jan., 1916, pp. 4–8.

Describes 1 new genus, 6 new species, and 3 new varieties.

GIRAULT, A. A. Three new species of Coccophagus, family Encyrtidae (Hym.).

Ent. News, 27, No. 1, Jan., 1916, pp. 33–35.

——— Two new Mymaridae from the eastern United States (Hym.).

Ent. News, 27, No. 2, Feb., 1916, pp. 69, 70.

Oectonus americanus and *O. silvensis* are described.

——— Description of eleven new species of chalcid flies.

Can. Ent., 48, No. 3, Mar., 1916, pp. 100–103, and No. 4, Apr., 1916, pp. 113–116, pl. 7.

Includes also descriptions of 2 new genera.

——— A new genus of Eulophidae from the United States.

Ent. News, 27, No. 4, Apr., 1916, pp. 153–154.

Describes *Pseudolyna*, new genus, and *P. flavimaculatus*, new species.

——— Descriptiones Hymenopterorum chalcidoidicorum variorum cum observationibus III.

Ent. News, 27, No. 5, May, 1916, pp. 223–228.

Describes 7 new species, and 1 new variety, with notes on various other species.

——— A new Phanurus from the United States, with notes on allied species.

Can. Ent., 48, No. 5, May 15, 1916, pp. 149, 150.

HEINRICH, CARL. Two new species of Coleophora.

Insecutor Inscitiæ Menstruus, 3, Nos. 11, 12, Dec. 31, 1915, pp. 143, 144.

Describes *Coleophora lentella* and *C. paylhasciella*.

HOWARD, LELAND O., HARRISON G. DYAR, and FREDERICK KNAB. The mosquitoes of North and Central America and the West Indies.

Carnegie Inst. of Washington, Pub. No. 159, 3, Pt. 1, Oct. 1, 1915, pp. i–vi, 1–523, 1 fig.

In this volume, which is Part I of the Systematic Description of the Monograph of Mosquitoes, 1 new subgenus and 13 new species are described.

HUNTER, W. D. A new species of Cephenomyia from the United States.

Proc. Ent. Soc. Washington, 17, No. 4, Dec. 31, 1915, pp. 169-173, pl. 16.

Describes *C. pratti* from the state of Texas.

JENNINGS, ALLAN H. Two new species of Simulium from tropical America.

Proc. Ent. Soc. Washington, 17, No. 4, Dec. 31, 1915, pp. 199, 200.

Describes *S. samboni* from Panama and *S. antillarum* from the Danish West Indies.

KENNEDY, CLARENCE HAMILTON. Notes on the life history and ecology of the dragonflies (Odonata) of Washington and Oregon.

Proc. U. S. Nat. Mus., 49, No. 2107, July 28, 1915, pp. 259-345, figs. 1-201.

Describes *Argia emma*.

KNAB, FREDERICK. A new Simulium from Texas.

Insecutor Inscitiæ Menstruus, 3, Nos. 5-7, July 20, 1915, pp. 77, 78.

Describes *S. mediovittatum*.

——— Commensalism in Desmometopa.

Proc. Ent. Soc. Washington, 17, No. 3, Sept. 18, 1915, pp. 117-121.

Gives an account of what is known of commensalism in this genus.

——— Some new neotropical Simuliidæ.

Bull. Ent. Research, 6, Pt. 3, Dec., 1915, pp. 279-282.

Describes 3 new species, paratypes of which are in the U. S. National Museum.

——— New Ceratopogoninæ from Peru.

Insecutor Inscitiæ Menstruus, 3, Nos. 8-10, Dec. 11, 1915, pp. 109-111.

Describes 2 new species, types of which are in the U. S. National Museum.

——— A new American fruit-fly.

Insecutor Inscitiæ Menstruus, 3, Nos. 11-12, Dec. 31, 1915, p. 146.

Describes *Anastrepha sylvicola* from Trinidad.

KNAB, FREDERICK. Notes on Peruvian mosquitoes and mosquito literature.

Rep. First Expedition to South America, 1913. *Harvard School of Tropical Medicine*, 1915, pp. 213-217.

Contains notes on various species of mosquitoes found in Peru.

——— Four European Diptera established in North America.

Insecutor Inscitiæ Menstruus, 4, Nos. 1-3, Mar. 31, 1916, pp. 1-4.

——— Dispersal of some Ortalidæ.

Bull. Brooklyn Ent. Soc., 11, No. 2, Apr., 1916, pp. 40-46, 3 figs.

Describes 1 new species and contains notes on various other species.

——— (See also under Harrison G. Dyar.)

——— (See also under Leland O. Howard.)

——— and R. C. SHANNON. Tanypezidæ in the United States.

Insecutor Inscitiæ Menstruus, 4, Nos. 1-3, Mar. 31, 1916, pp. 33-36.

Describes *Tanypeza luteipennis* and *T. picticornis*.

KOTINSKY, JACOB. The Bermuda grass Odonaspis.

Proc. Ent. Soc. Washington, 17, No. 3, Sept. 18, 1915, pp. 101-104, figs. 1, 2.

Describes *O. ruthæ*.

MALLOCH, J. R. Notes on the flies of the genus Pseudodinia, with description of a new species.

Proc. U. S. Nat. Mus., 49, No. 2101, July 16, 1915, pp. 151, 152.

Describes *P. pollia*.

——— Flies of the genus Agromyza, related to Agromyza virens.

Proc. U. S. Nat. Mus., 49, No. 2097, July 24, 1915, pp. 103-108, pl. 36, fig. 12.

Describes 5 new species and contains notes on other species.

ROHWER, S. A. Descriptions of new species of Hymenoptera.

Proc. U. S. Nat. Mus., 49, No. 2105, July 16, 1915, pp. 205-249.

Two new genera, 47 new species and 1 new variety described and 1 new name proposed.

——— A remarkable new genus of Cephidæ.

Proc. Ent. Soc. Washington, 17, No. 3, Sept. 18, 1915, pp. 114-117, pl. 14.

Describes *Syneris* n. g., and *libocedrii* n. sp.

——— The mating habits of some sawflies.

Proc. Ent. Soc. Washington, 17, No. 4, Dec. 31, 1915, pp. 195-198, fig. 1.

——— Ametastegia glabrata (Fallen), a holarctic sawfly.

Proc. Ent. Soc. Washington, 17, No. 4, Dec. 31, 1915, pp. 198, 199, pl. 22.

——— A. B. GAHAN, and R. A. CUSHMAN. Some generic corrections in the Ophioninæ.

Proc. Ent. Soc. Washington, 17, No. 3, Sept. 18, 1915, pp. 149, 150.

Gives synonymy of various genera.

SCHAUS, WILLIAM. A generic revision of the American moths of the subfamily Hypeninæ, with descriptions of new genera and species.

Proc. U. S. Nat. Mus., 50, No. 2133, May 20, 1916, pp. 259-399.

Gives a table of genera and describes 43 new genera and 160 new species.

SHANNON, R. C. Captures of the Syrphid fly, Merapioidus villosus Bigot.

Proc. Ent. Soc. Washington, 17, No. 3, Sept. 18, 1915, pp. 147, 148.

——— An eastern Chilosia with hairy eyes.

Proc. Ent. Soc. Washington, 17, No. 3, Sept. 18, 1915, p. 168.

Describes *C. primoveris*.

——— Eastern Symphoromyia attacking man.

Proc. Ent. Soc. Washington, 17, No. 4, Dec. 31, 1915, pp. 188, 189.

SHANNON, R. C. A new eastern Brachyopa.

Insecutor Inscitiæ Menstruus, 3, Nos. 11-12, Dec. 31, 1915, pp. 144, 145.

Describes *B. flavescens*.

——— (See also under Frederick Knab.)

TIMBERLAKE, P. H. Revision of the parasitic hymenopterous insects of the genus Aphycus Mayr, with notice of some related genera.

Proc. U. S. Nat. Mus., 50, No. 2136, May 31, 1916, pp. 561-640, pls. 26-31.

A table of the genera treated and tables for the species are given and 3 new genera and 24 new species described.

TOWNSEND, CHARLES H. T. New Andean Spallanzaniine flies.

Insecutor Inscitiæ Menstruus, 3, Nos. 5-7, July 20, 1915, pp. 63-69.

Describes 5 new genera and 5 new species.

——— New Peruvian Hystriciine flies.

Insecutor Inscitiæ Menstruus, 3, Nos. 5-7, July 20, 1915, pp. 69-76.

Describes 7 new genera and 7 new species.

——— On the reproductive and host habits of Cuterebra and Dermatobia.

Science (n. s.), 42, No. 1077, Aug. 20, 1915, pp. 253-255.

Contains a description of the female reproductive system of *Cuterebra* and a discussion of the singular habit of *Dermatobia* in attaching its eggs to blood-sucking insects to have them transported to the hosts.

——— New Canadian and Alaskan Muscoidea.

Can. Ent., 47, No. 9, Sept. 13, 1915, pp. 285-292.

Describes 7 new genera and 6 new species.

——— Revision of Myiophasia.

Proc. Ent. Soc. Washington, 17, No. 3, Sept. 18, 1915, pp. 107-114.

Gives a table of genera and describes 2 new genera, 1 new species, 2 new subspecies and proposes 2 new names.

TOWNSEND, CHARLES H. T. Some muscoid synonyms.

Ent. News, 26, Oct., 1915, p. 366.

——— New neotropical muscoid flies.

Proc. U. S. Nat. Mus., 49, No. 2115, Nov. 27, 1915, pp. 405–440.

Thirty-nine new genera and 39 new species are described.

——— Nine new tropical American genera of Muscoidea.

Insecutor Inscitiæ Menstruus, 3, Nos. 8–10, Dec. 11, 1915, pp. 91–97.

Contains also descriptions of 6 new species.

——— New genera of muscoid flies from the Middle Atlantic States.

Insecutor Inscitiæ Menstruus, 3, Nos. 8–10, Dec. 11, 1915, pp. 97–104.

Describes 5 new genera and 5 new species.

——— Synonymical notes on Muscoidea.

Insecutor Inscitiæ Menstruus, 3, Nos. 8–10, Dec. 11, 1915, pp. 115–122.

——— New western and southwestern Muscoidea.

Journ. N. Y. Ent. Soc., 23, Dec., 1915, pp. 216–234.

Nineteen new genera and 18 new species are described.

——— Andrina radicis Townsend, new name.

Can. Ent., 48, No. 1, Jan. 13, 1916, p. 19.

——— Diagnoses of new genera of muscoid flies founded on old species.

Proc. U. S. Nat. Mus., 49, No. 2128, Jan. 14, 1916, pp. 617–633.

Describes 46 new genera and 1 new species.

——— Two new genera of African Muscoidea.

Ann. Mag. Nat. Hist., 8th Ser., 17, Feb., 1916, pp. 174–176.

Contains descriptions of 2 new genera and 2 new species.

——— New and noteworthy Brazilian Muscoidea collected by Herbert H. Smith.

TOWNSEND, CHARLES H. T.—Continued.

Bull. Amer. Mus. Nat. Hist., 35, Art. 2, Feb. 21, 1916, pp. 15–22.

Paratypes of 4 of the new species described are in the U. S. National Museum.

——— Designations of muscoid genotypes, with genera and species.

Insecutor Inscitiæ Menstruus, 4, Nos. 1–3, Mar. 31, 1916, pp. 4–12.

Describes 6 new genera.

——— Elucidations of New England Muscoidea.

Insecutor Inscitiæ Menstruus, 4, Nos. 1–3, Mar. 31, 1916, pp. 17–33.

Describes 11 new genera, 4 new species, proposes 1 new name and contains notes on various other genera and species.

——— New muscoid genera (Dip.).

Ent. News, 27, Apr., 1916, p. 178.

Eleven new genera are proposed.

——— Description of two new tachinids (Dip.).

Ent. News, 27, May, 1916, p. 217.

——— New genera and species of Australian Muscoidea.

Can. Ent., 48, No. 5, May 15, 1916, pp. 151–160.

Describes 16 new genera and 5 new species.

WALTON, W. R. A new and interesting genus of North American Tachinidæ.

Proc. Ent. Soc. Washington, 17, No. 3, Sept. 18, 1915, pp. 104–107, pl. 13.

Describes *Coquillettina planki*, n. g., n. sp.

——— A new nocturnal species of Tachinidæ.

Proc. Ent. Soc. Washington, 17, No. 3, Sept. 18, 1915, pp. 162–164, figs. 1–3.

Describes *Neophyto nocturnalis*.

——— The tachinid fly Mauromyia pulla Coq. and its sexual dimorphism.

Proc. Ent. Soc. Washington, 17, No. 4, Dec. 31, 1915, pp. 190–193, 1 fig.

CRUSTACEANS.

DODDS, G. S. Descriptions of two new species of Entomostraca from Colorado, with notes on other species.

Proc. U. S. Nat. Mus., 49, No. 2096, Aug. 13, 1915, pp. 97–102, figs. 1–10.

Enumerates species collected by the author during four summers spent at Tolland, Colo., and describes as new *Streptocephalus coloradensis* and *Diaptomus arapahoensis*. The types are in the U. S. National Museum.

FAXON, WALTER. Notes on the crayfishes in the United States National Museum and the Museum of Comparative Zoölogy with descriptions of new species and subspecies to which is appended a catalogue of the known species and subspecies.

Memoirs Mus. Comp. Zoöl., 40, No. 8, July, 1914, pp. 351–427, pls. 1–13.

Presents a critical study of the crayfishes of the U. S. National Museum and Museum of Comparative Zoölogy collections and describes as new 3 species and 9 subspecies. The National Museum has the following types: *Astacus nigrescens fortis*, *A. gambelii connectens*, *A. pallipes italicus*, *Cambarus spinosus guilelmi*, *C. bartonii carinirostris* (Hay mss.), *C. b. asperimanus*; and the Museum of Comparative Zoölogy the following: *Parastacus araucanius*, *Cambarus clarkii paeninsulanus*, *C. viae-viridis*, *C. validus*, *C. bartonii laevis*, *C. grayson*.

HANSEN, H. J. The Euphausiacean crustaceans of the "Albatross" expedition to the Philippines. [Scientific results of the Philippine cruise of the Fisheries steamer "Albatross," 1907–1910.—No. 33.]

Proc. U. S. Nat. Mus., 49, No. 2129, Jan. 14, 1916, pp. 635–654, pl. 83.

Discusses briefly the geographical distribution of the Euphausiacea of the Philippines as compared with that of the Schizopoda from the Dutch *Siboga* expedition in the seas and straits of the Indian Archipelago. Notes the enormous number of Euphausiacea present with reference to its potential value as fish food. Lists the species with the localities arranged according to latitude north, beginning with the most northern locality, and describes as new *Euphausia fallax* and *Nematoscelis lobata*. This collection of Euphausiacea, including the 2 type specimens, is in the U. S. National Museum.

HANSEN, H. J.—Continued.

MARSH, C. DWIGHT. A new crustacean, Diaptomus virginiensis, and a description of Diaptomus tyrelli Poppe.

Proc. U. S. Nat. Mus., 49, No. 2117, Dec. 11, 1915, pp. 457–462, figs. 1–7.

Publishes modifications of the diagnosis of *Diaptomus tyrelli* Poppe, resultant from the study of specimens from new localities and describes as new *D. virginiensis*. The type is in the U. S. National Museum.

PEARSE, A. S. An account of the crustacea collected by the Walker Expedition to Santa Marta, Colombia.

Proc. U. S. Nat. Mus., 49, No. 2123, Dec. 23, 1915, pp. 531–556, pls. 70–73, figs. 1–9.

Presents a critical study of the carcinological fauna of this hitherto little explored region, discusses the habitats, with annotations on the ecology of the group; presents concisely the geographical affinities of the crustaceans of the Santa Marta region, enumerates the species collected and describes as new *Cubaris brevispinis*, *Minca*, n. g., *M. ruthveni* (hologenotype), *Sphaeroniscus gaigei*, *S. colombiensis*, *Ligyda richardsonae*. The holotypes are in the museum of the University of Michigan, and a series of paratypes are in the U. S. National Museum.

RATHBUN, MARY J. Cymopolia versus Palicus.

Proc. Biol. Soc. Washington, 28, Nov. 29, 1915, p. 180.

A note on the genus *Cymopolia* which is restored to validity in place of *Palicus*.

——— New species of crabs of the families Inachidæ and Parthenopidæ. [Scientific results of the Philippine cruise of the Fisheries steamer "Albatross," 1907–1910.—No. 34.]

Proc. U. S. Nat. Mus., 50, No. 2135, May 31, 1916, pp. 527–559.

The third of a series of papers describing new crabs obtained in Philippine and adjacent waters. The fol-

RATHBUN, MARY J.—Continued.

lowing new species are described: *Achaeus villosus, Platymaia bartschi, (P. alcocki), P. remifera, P. fimbriata, Cyrtomaia horrida, C. echinata, Achaeopsis suluensis, Peltinia sublimis, Antillibinia gilliolaensis, Pugettia mindanaoensis, P. leptensis, Sphenocarcinus luzonicus, S. auritus, S. nodosus, Hyastenus trispinosus, H. auctus, H. tuberculatus, H. orbis, H. biformis, H. fraterculus, H. acrobiculatus, H. tinaktensis, Chorilia sphenocarcinoides, Nazioides rombloni, Phalangipus filiformis, P. retusus, maja suluensis, M. linapacanensis, M. bisarmata, Leptomithrax sinensis, Parthenope (Rhinolambrus) rudis, P. (Pseudolambrus) parva, Cryptopodia angusta.* All of the type specimens except that of *Platymaia alcocki* are in the collections of the U. S. National Museum.

RATHBUN, MARY J. Description of three species of crabs (Oxachila) from the eastern coast of North America.

Proc. U. S. Nat. Mus., 50, No. 2138, May 31, 1916, pp. 647-652, pl. 36.

Presents a critical study of the specimens of so-called *Oxachila tuberosa* in collections of the U. S. National Museum, the Museum of Comparative Zoölogy, and the Museum of the State University of Iowa, and establishes the presence of 3 species instead of 1 in the area extending from Cape Hatteras, N. C., to the Gulf of Mexico and the West Indies. *O. tuberosa* Stimpson is redescribed and figured, and *O. antillensis* and *O. semilevis* are listed as new. Both types are in the U. S. National Museum.

ECHINODERMS.

CLARK, AUSTIN H. The distribution of the recent crinoids on the coasts of Australia.

Internationale Revue der gesamten Hydrobiologie und Hydrographie, 1915, pp. 222-234.

A detailed account of the distribution of the three faunal elements which together make up the Australian crinoid fauna.

——— A study of the recent crinoids which are congeneric with fossil species.

Amer. Journ. Sci., 40, Art. 5, July, 1915, pp. 60-66.

The geographical, thermal and bathymetrical distribution of the recent crinoids congeneric with fossil species is discussed in detail.

——— The relation between the maximum and the average bathymetric range, and the mean and the average depth of habitat, in the subfamilies and higher groups of recent crinoids.

Amer. Journ. Sci., 40, Art. 6, July, 1915, pp. 67-74.

The average bathymetrical range of a crinoid family is approximately the same as the average depth inhabited. As a rule the more specialized families have small, the less specialized large, bathymetric ranges. The thermal range increases with specialization. The more specialized the group the less the average depth inhabited by it.

CLARK, AUSTIN H. A phylogenetic study of the recent crinoids, with special reference to the question of specialization through the partial or complete suppression of structural characters.

Smithsonian Misc. Colls., 65, No. 10, Aug. 19, 1915, pp. 1-67.

The characters used in differentiating the groups of recent crinoids are arranged in contrasting pairs, the more primitive element of each pair being numbered 1, and the more specialized 2; the families are then arranged in each contrasting pair according to the occurrence of character 1 or character 2. This gives a mathematical basis for the determination of the relative phylogenetical status of each family. In each contrasting pair the more specialized character is found to differ from the more generalized in the partial or complete suppression of some feature.

——— A study of asymmetry as developed in the genera and families of recent crinoids.

Amer. Naturalist, 49, Sept., 1915, pp. 521-546.

Asymmetry in the recent crinoids is chiefly developed under (1) internal unfavorable conditions, induced by incipient phylogenetical degeneration through type-senescence, as in the Plicatocrinidæ, which in the recent seas represent the almost exclusively palæozoic *Inadunata;* and (2) exter-

CLARK, AUSTIN H.—Continued.

nal unfavorable conditions, taking the form of (a) phylogenetically excessive cold, which, to cite one example, appears to be the determining factor in the asymmetry of the genus *Promachocrinus*, or of (b) phylogenetically excessive warmth, which appears to be the determining factor in the asymmetry of the family Comasteridæ.

——— The first New Zealand crinoid.

Proc. Biol. Soc. Washington, 29, Feb. 24, 1916, p. 48.

Description of *Comanthus trichoptera benhami*, the first crinoid known from New Zealand. Type specimen is in the U. S. National Museum.

——— Identification of a supposedly anomalous echinoderm.

Proc. Biol. Soc. Washington, 29, Feb. 24, 1916, pp. 49, 50.

A curious organism described by Mr. H. L. Clark in 1902 and supposed by him to be a holothurian related to *Spherothuria* is shown to be merely a detached cyst from the arm of a *Brisinga*. The specimen is in the U. S. National Museum.

——— Seven new genera of echinoderms.

Journ. Washington Acad. Sci., 6, No. 5, Mar. 4, 1916, pp. 115–122.

Describes 4 new genera of crinoids and 3 new genera of starfishes, as follows: Crinoids: *Comatonia* (Genotype *Actinometra cristata* Hartlaub, 1912); *Austrometra* (Genotype *Oligometra thetidis* H. L. Clark, 1909); *Cotylometra* (Genotype *Oligometra gracilicirra* A. H. Clark, 1908); *Daidalometra* (Genotype *Antedon hana* A. H. Clark, 1907). Starfishes: *Mariaster* (Genotype *Johannaster giganteus* Goto, 1914); *Pseudonepanthia* (Genotype *Pseudonepanthia gotoi*, sp. nov.); *Glabraster* (Genotype *Porania magellanica* Studer, 1876). Also the new species of starfish, *Pseudonepanthia gotoi*, the specimen of which is in the U. S. National Museum.

——— A new starfish (Lydiaster americanus) from the Gulf of Mexico, representing a section of the subfamily Goniasterinæ hitherto known only from the Indo-Pacific region.

Journ. Washington Acad. Sci., 6, No. 6, Mar. 19, 1916, pp. 141–144.

CLARK, AUSTIN H.—Continued.

Description of *Lydiaster americanus*, a starfish representing a genus hitherto known only from off southwestern Ceylon.

——— Six new starfishes from the Gulf of California and adjacent waters.

Proc. Biol. Soc. Washington, 29, Apr. 4, 1916, pp. 51–62.

Describes the new genera *Saraster* and *Cylaster*, and the following new species: *Sideriaster canaliculata*, *Saraster insignis*, *Anthenea mexicana*, *Narcissia gracilis*, *Echinaster parvispinus* and *Cylaster seminuda*. The types are in the U. S. National Museum.

——— Three interesting additions to the crinoid fauna of Sagami Bay and Suruga Gulf, Japan.

Proc. Biol. Soc. Washington, 29, June 6, 1916, pp. 105–108.

Describes 3 new crinoids, one representing a genus and the other two specific groups in their respective genera, hitherto unknown from Japan. The new species are: *Comantheria intermedia*, *Dichrometra doffleini*, *Prometra owstoni*. The types are in the U. S. National Museum.

FISHER, WALTER K. Notes on the systematic position of certain genera and higher groups of starfishes.

Proc. Biol. Soc. Washington, 29, Jan. 25, 1916, pp. 1–5.

The family Goniopectinidæ is revised, and subdivided into the Ctenodiscinæ (*Ctenodiscus* and ?*Pectinidiscus*) and Goniopectininæ (*Goniopecten* and *Prionaster*); the genus *Radiaster* Perrier(= *Mimaster* Sladen) is made the type of a new family Radiastinidæ; including *Radiaster* and *Mimastrella*, gen. nov. (genotype *Mimaster cognatus* Sladen); the genera *Solaster* and *Crossaster* are found to be readily distinguishable; the genus *Craspidaster* is assigned to a new subfamily, Craspidasterinæ, in the family Astropectinidæ.

——— New East Indian starfishes.

Proc. Biol. Soc. Washington, 29, Feb. 24, 1916, pp. 27–35.

A continuation of the author's report on the starfishes collected by the U. S. Fisheries steamer *Albatross* during the Philippine Expedition, 1907–1910. The

FISHER, WALTER K.—Continued.

species herein published will be fully described and figured in the final report. Describes as new 1 genus, *Bythiolophus*, 2 subgenera, *Craterobrisinga* and *Stegnobrisinga*, 15 species, *Asterina cristata*, *Pteraster corynetes*, *Hymenaster rhodopeplus*, *H. bartschi*, *Zoroaster ophiactis*, *Z. microporus*, *Bythiolophus acanthinus*, *Odinia penichra*, *Brisinga trachydisca*, *B. mimica*, *B. moluccana*, *B. acanthogenys*, *B.* (*Craterobrisinga*) *eucoryne*, *B.* (*Stegnobrisinga*) *placoderma*, *Freyella spatulifera*, and 3 subspecies, *Pteraster obesus myonotus*, *Diplopteraster multipes patagiatus*, *Zoroaster carinatus philippinensis*. The types are in the U. S. National Museum.

OHSHIMA, HIROSHI. The Synaptidæ of Japan.

Annotationes Zoologicæ Japonenses, 8, 1914, pp. 467–482.

Presents notes on all synaptids known to occur in Japan, including notices, in manuscript, of 6 new species and an old one collected by the *Albatross*, subsequently described and published in Proc. U. S. Nat. Mus., 48, No. 2073, Feb. 11, 1914, pp. 213–291, pls. 8–11. The new species are *Protankyra kaposhimensis*, *Chiridota discolor*, *C. albatrossii*, *Taeniogyrus cidaridis*, *Taxodora pacifica*, *Myriotrochus mitsukurii*. The old species is *Myriotrochus rinkii* Steenstrup.

NEMATHELMINTHES.

HALL, MAURICE C. Nematode parasites of mammals of the orders Rodentia, Lagomorpha, and Hyracoidea.

Proc. U. S. Nat. Mus., 50, No. 2131, May 13, 1916, pp. 1–258, pl. 1, figs. 1–290.

New genera: *Hepaticola*, *Heterozynema*, *Seuratum*, *Ransomus*, *Citellinema*, *Warrenius*, *Heligmosomoides*, *Rictularioides*. New species: *Heterozynema cucullatum*, *Oxyuris sciuri*, *O. triradiata*, *Ransomus rodentorum*, *Trichostrongylus delicatus*, *Nematodirus neotoma*, *Citellinema bifurcatum*, *Warrenius quadrivittati*, *Heligmosomoides linstowi*, *Heligmosomum vexillatum*, *Rictularia coloradensis*, *Filaria linstowi*, *Microfilaria plimmeri*, *Protospirura ascaroides*. Type material of all new species is in the U. S. National Museum.

RANSOM, BRAYTON H., and MAURICE C. HALL. The life history of Gongylonema scutatum.

Journ. Parasitol., Urbana, Ill., 2, No. 2, Dec., 1915, pp. 80–86.

VAN CLEAVE, H. J. Acanthocephala in North American Amphibia.

Journ. Parasitol., Urbana, Ill., 1, No. 4, June, 1915, pp. 175–178, 1 fig.

WARD, HENRY B. Gongylonema in the rôle of a human parasite.

Journ. Parasitol., Urbana, Ill., 2, No. 3, Mar., 1916, pp. 119–125, 1 pl.

PLATYHELMINTHES.

FOSTER, WINTHROP D. Two new cases of polyradiate cestodes, with a summary of the cases already known.

Journ. Parasitol., Urbana, Ill., 2, No. 1, Sept., 1915, pp. 7–19, figs. 1–4.

HALL, MAURICE C. Hasstilesia tricolor (Stiles and Hassall, 1894), a common parasite of rabbits in the United States.

Journ. Amer. Vet. Med. Assoc., 48 (n. s.), Vol. 1, No. 4, Jan., 1916, pp. 453–456.

Describes 1 new genus: *Hasstilesia*.

RANSOM, BRAYTON H. Third American case of Dipylidium caninum in man.

Journ. Parasitol., Urbana, Ill., 2, No. 2, Dec., 1915, p. 93.

Read before the 27th meeting of the Helminthological Society of Washington, Oct. 22, 1915.

COELENTERATES.

BIGELOW, HENRY B. Epereetmus, a new genus of Trachomedusae.

Proc. U. S. Nat. Mus., 49, No. 2114, Aug. 31, 1915, pp. 399-404, pl. 59.

This paper, based on Museum material, discusses the relationship of the genera at present grouped under the family Petasidae, and describes as new the genus *Eperetmus*, and the species *E. typus* (holgenotype).

PROTOZOANS.

CRAWLEY, HOWARD. Note on the stage of Piroplasma bigeminum which occurs in the cattle tick, Margaropus annulatus.

Journ. Parasitol., Urbana, Ill., 2, No. 2, Dec., 1915, pp. 87-92, figs. A-D.

——— The sexual evolution of Sarcocystis muris.

Proc. Acad. Nat. Sci. Phila., 68, Jan., 1916, pp. 2-43, pls. 1-5.

RANSOM, BRAYTON H. A case of Paragonimus westermanii or P. kellicotti in a cat.

Journ. Parasitol., Urbana, Ill., 1, No. 4, June, 1915, p. 202.

Secretary's abstract of remarks before 26th meeting of the Helminthological Society of Washington, Apr. 22, 1915.

BOTANY.

BALL, CARLETON R. Notes on North American willows, II.

Botan. Gaz., 60, No. 1, July 16, 1915, pp. 45-54, figs. 1-3.

Based largely upon material in the National Herbarium.

BRITTON, N. L., and J. N. ROSE. The relationships and distribution of the Cactaceae.

Carnegie Inst. of Washington, Year Book No. 14, 1915, pp. 102, 103.

CHASE, AGNES. Impressions of the ferns of Porto Rico.

Amer. Fern Journ., 5, No. 3, July-Sept., 1915, pp. 70-83. (Issued July 10, 1915.)

——— The structure of the spikelet of Aphanelytrum.

Botan. Gaz., 61, No. 4, Apr., 1916, pp. 340-343, fig. 1.

——— (See also under A. S. Hitchcock.)

COOK, O. F. Quichua names of sweet potatoes.

Journ. Washington Acad. Sci., 6, No. 4, Feb. 19, 1916, pp. 86-90.

——— Determining types of genera.

Journ. Washington Acad. Sci., 6, No. 6, Mar. 19, 1916, pp. 137-140.

COOK, O. F. Agriculture and native vegetation in Peru.

Journ. Washington Acad. Sci., 6, No. 10, May 19, 1916, pp. 284-293, figs. 1, 2.

——— Staircase farms of the ancients.

Nat. Geog. Mag., 29, No. 5, May, 1916, pp. 474-534, illustrated.

——— Branching and flowering habits of cacao and patashte.

Contr. U. S. Nat. Herb., 17, Pt. 8, June 28, 1916, pp. 609-625, pls. 44-54.

——— and ROBERT CARTER COOK. Polynesian names of sweet potatoes.

Journ. Washington Acad. Sci., 6, No. 11, June 4, 1916, pp. 339-347.

COVILLE, FREDERICK V. Grossularia marcescens.

Proc. Biol. Soc. Washington, 28, Nov. 29, 1915, p. 181.

——— Directions for blueberry culture, 1916.

Bull. U. S. Dept. Agr., No. 334, Dec. 28, 1915, pp. 1-16, pls. 1-17.

GOLDMAN, EDWARD A. Plant records of an expedition to Lower California.

Contr. U. S. Nat. Herb., 16, Pt. 14, Feb. 10, 1916, pp. 309-371, map, pls. 104-133.

Includes descriptions of 3 new oaks, *Quercus brandegei*, *Q. idonea*, and *Q. devia*.

GRIGGS, ROBERT F. Some new species and varieties of Bihai.

Bull. Torrey Bot. Club, 42, No. 6, June (16), 1915, pp. 315-330, pl. 19, figs. 1-6.

The types of three of the new species are in the National Herbarium.

HITCHCOCK, ALBERT SPEAR. New or noteworthy grasses.

Amer. Journ. Bot., 2, No. 6, June, 1915, pp. 299-310.

——— Note on a New Zealand grass.

Proc. Biol. Soc. Washington, 28, Nov. 29, 1915, p. 182.

——— Poaceae (pars).

North Amer. Flora, 17, Pt. 3, Dec. 20, 1915, pp. 193-288.

——— The scope and relations of taxonomic botany.

Science (n. s.), 43, No. 1106, Mar. 10, 1916, pp. 331-342.

——— Notes on some foreign grasses.

Proc. Biol. Soc. Washington, 29, June 6, 1916, p. 128.

——— and AGNES CHASE. Tropical North American species of Panicum.

Contr. U. S. Nat. Herb., 17, Pt. 6, July 24, 1915, pp. 459-539, figs. 11-149.

Includes descriptions of 9 new species of *Panicum* from tropical America.

MCATEE, W. L. The winter flora of Muskeget Island, Massachusetts.

Rhodora, 18, No. 209, May 4, 1916, pp. 93-99.

The paper is based upon a collection of plants in the National Herbarium.

MACKENZIE, KENNETH KENT. Notes on Carex—IX.

Bull. Torrey Bot. Club, 42, No. 11, Nov., 1915, pp. 603-621. (Issued Dec. 11, 1915.)

The type of a new species, *Carex eplestonii*, is in the National Herbarium.

MAXON, WILLIAM R. Studies of tropical American ferns—No. 6.

Contr. U. S. Nat. Herb., 17, Pt. 7, May 23, 1916, pp. 541-608, pls. 32-43.

Relates chiefly to three widely misunderstood groups of *Polypodium*, typified by *P. trichomanoides*, *P. furfuraceum*, and *P. squamatum*, respectively, the two latter groups consisting of species with more or less scaly fronds. In these and other groups of *Polypodium* 16 species are described as new, and many others are redescribed or reinstated. Critical notes are included also on several species of *Nothoiaena*, 2 being described as new.

MERRILL, E. D. A simple method of making carbon leaf impressions.

Torreya, 15, No. 8, Aug. 30, 1915, pp. 175-181, figs. 1-3.

——— On the application of the generic name Nauclea of Linnaeus.

Journ. Washington Acad. Sci., 5, No. 15, Sept. 19, 1915, pp. 530-542.

Proposes the new generic name *Neonauclea* for *Nauclea* of Korthals, Bentham and Hooker, and other later authors (not Linnaeus 1762), with transfer of 46 species from *Nauclea*. The genus *Nauclea* as restricted consists of about 25 species, extending from tropical Africa through tropical Asia and Malaya to Australia and Polynesia. A majority of these are here first transferred to *Nauclea*, having been recognised commonly under *Sarcocephalus*.

——— The systematic position of the "rain tree," Pithecolobium saman.

Journ. Washington Acad. Sci., 6, No. 2, Jan. 19, 1916, pp. 42-48.

Describes the new genus *Samanea*, with *S. saman* (*Mimosa saman* Jacq.) as its type.

NORTON, J. B. The eastern and the western migrations of Smilax into North America.

Journ. Washington Acad. Sci., 6, No. 10, May 19, 1916, pp. 281–283, fig. 1.

PIPER, C. V. Notes on Quamasia with a description of a new species.

Proc. Biol. Soc. Washington, 29, Apr. 4, 1916, pp. 77–81.

The type of a new species, *Quamasia walpolei*, is in the National Herbarium.

PITTIER, HENRY. Some new caesalpiniaceous trees of Panama.

Journ. Washington Acad. Sci., 5, No. 13, July 19, 1915, pp. 468–474.

Four new species of *Centrolobium*, *Peltogyne*, and *Dimorphandra* are described.

——— On the characters and relationships of the genus Monopteryx Spruce.

Bull. Torrey Bot. Club, 42, No. 11, Nov., 1915, pp. 623–627, figs. 1, 2. (Issued Dec. 11, 1915.)

A new species, *Monopteryx jahnii*, is described.

——— New or noteworthy plants from Colombia and Central America—5.

Contr. U. S. Nat. Herb., 18, Pt. 4, Mar. 3, 1916, pp. 143–171, pls. 57–80, figs. 88–97.

Contains a full discussion of the genera *Brownea* and *Browneopsis*; includes also a comparison of *Bombax* and *Pachira*, with description of an intermediate new genus, *Bombacopsis*, with 2 species.

——— Inophloeum, a new genus of the mulberry family.

Journ. Washington Acad. Sci., 6, No. 5, Mar. 4, 1916, pp. 112–114.

Describes this new genus from Panama, based on *Olmedia? armata* Miquel.

ROSE, J. N. Exploration in western South America.

Journ. N. Y. Bot. Gard., 16, No. 188, Aug., 1915, pp. 172–174.

——— Edward Lee Greene.

Botan. Gaz., 61, No. 1, Jan. 15, 1916, pp. 70–72, 1 fig.

ROSE, J. N. Recent explorations in the cactus deserts of South America.

Proc. Nat. Acad. Sci., 2, No. 2, Feb. 15, 1916, pp. 73, 74.

——— (See also under N. L. Britton.)

ROSEN, HARRY R. The development of the Phylloxera vastatrix leaf gall.

Science (n. s.), 43, No. 1102, Feb. 11, 1916, pp. 216, 217.

SAFFORD, WILLIAM EDWIN. An Aztec narcotic (Lophophora williamsii).

Journ. of Heredity, 6, No. 7, July, 1915, pp. 291–311, with 11 illustrations.

——— Eysenhardtia polystachya, the source of the true Lignum nephriticum mexicanum.

Journ. Washington Acad. Sci., 5, No. 14, Aug. 19 1915, pp. 503–517, figs. 1, 2.

——— A remarkable new Eysenhardtia from the west coast of Mexico.

Journ. Washington Acad. Sci., 6, No. 6, Mar. 19, 1916, pp. 133–135, 1 fig.

Describes the new species *Eysenhardtia olivana*, from Guererro, Mexico.

——— Desmopsis, a new genus of Annonaceae.

Bull. Torrey Bot. Club, 43, No. 4, Apr., 1916, pp. 183–193, pls. 7–9, 1 fig. (Issued April, 1916.)

Describes the annonaceous genus *Desmopsis*, with 5 species, all from tropical America, 2 being described as new. The type species is *D. panamensis* (*Unona panamensis* Robinson).

——— Rolliniopsis, a new genus of Annonaceae from Brazil.

Journ. Washington Acad. Sci., 6, No. 8, Apr. 19, 1916, pp. 197–204, figs. 1, 2.

Describes the new genus *Rolliniopsis*, based upon *R. discreta*, sp. nov., from Brazil. Of the 3 other species recognized 1 is new, and 2 are transferred from *Rollinia*. All are natives of Brazil.

SAFFORD, WILLIAM EDWIN. Lignum nephriticum—its history and an account of the remarkable fluorescence of its infusion.

Rep. Smithsonian Inst., 1915 (June, 1916), pp. 271–298, pls. 1–7, figs. 1–7.

——— Proposed classification of the genus Rollinia, with descriptions of several new species.

Journ. Washington Acad. Sci., 6, No. 12, June 19, 1916, pp. 370–384, figs. 1–3.

Includes descriptions of 3 new species from Brazil, Costa Rica and Panama, respectively.

SMITH, JOHN DONNELL. Undescribed plants from Guatemala and other Central American republics. XXXIX.

Botan. Gaz., 61, No. 5, May 15, 1916, pp. 373–387.

Includes descriptions of 21 new species, as well as keys to the Central American species of *Episcia* and *Besleria*.

STANDLEY, PAUL C. Vegetation of the Brazos Canyon, New Mexico.

Plant World, 18, No. 7, July, 1915, pp. 179–191, figs. 1–3.

——— A remarkable new geranium from Venezuela.

Journ. Washington Acad. Sci., 5, No. 17, Oct. 19, 1915, pp. 600–602.

——— Notes on Orthopterygium huaucui.

Journ. Washington Acad. Sci., 5, No. 19, Nov. 19, 1915, pp. 628–631, 1 fig.

——— Hepaticae of New Mexico.

The Bryologist, 18, No. 6, Nov., 1915, pp. 81–83.

——— A new species of Iresine from the United States.

Proc. Biol. Soc. Washington, 28, Nov. 29, 1915, pp. 171–173.

——— The genus Espeletia.

Amer. Journ. Bot., 2, No. 9, Nov., 1915, pp. 468–485, pl. 17, figs. 1–6. (Issued Dec. 16, 1915.)

Includes descriptions of 6 new species.

STANDLEY, PAUL C. Tidestromia, a new generic name.

Journ. Washington Acad. Sci., 6, No. 3, Feb. 4, 1916, pp. 69, 70.

The generic name *Tidestromia* is proposed to replace *Cladothrix* Nuttall, a homonym.

——— Studies of tropical American phanerogams—No. 2.

Contr. U. S. Nat. Herb., 18, Pt. 3, Feb. 11, 1916, pp. 87–142.

Includes numerous changes of name and descriptions of new species, based chiefly upon material collected during the progress of the Smithsonian Biological Survey of the Panama Canal Zone.

——— Some ferns of Dutchess County, New York.

Amer. Fern Journ., 6, No. 1, Jan.–Mar., 1916, pp. 1–7.

——— A change of name for an Arizona mistletoe.

Proc. Biol. Soc. Washington, 29, Apr. 4, 1916, p. 86.

——— Comparative notes on the floras of New Mexico and Argentina.

Journ. Washington Acad. Sci., 6, No. 9, May 4, 1916, pp. 236–244.

——— Fungi of New Mexico.

Mycologia, 8, No. 3, May 27, 1916, pp. 142–177.

——— The ferns of Greene County, Missouri.

Amer. Fern Journ., 6, No. 2, Apr.–June, 1916, pp. 44–51.

——— (See also under E. O. Wooton.)

SWINGLE, WALTER T. Microcitrus, a new genus of Australian citrous fruits.

Journ. Washington Acad. Sci., 5, No. 16, Oct. 4, 1915, pp. 569–578, figs. 1–4.

Describes the new genus *Microcitrus*, with 4 species, all Australian, the type being *Citrus australasica* F. Muell.

SWINGLE, WALTER T. Pamburus, a new genus related to Citrus, from India.

Journ. Washington Acad. Sci., 6, No. 11, June 4, 1916, pp. 335-338.

Describes the new genus *Pamburus*, of southern India and Ceylon, and distinguishes it from *Atalantia*, *Paramignya*, and other related genera. The type and sole species is *Pamburus missionis* (*Limonia missionis* Wight).

WILLIAMS, R. S. Mosses from the west coast of South America.

Bull. Torrey Bot. Club, 42, No. 7, July, 1915, pp. 393-404, pls. 21-25.

The paper is an enumeration of the mosses obtained by Dr. and Mrs. J. N. Rose in Peru, Bolivia, and Chile in 1914. Ten new species are described, including 2 which represent a new genus, *Pseudocrossidium* (type, *P. chilense*).

WILLIAMS, R. S.—Continued.

——— Mosses of the Philippine and Hawaiian Islands collected by the late John B. Leiberg.

Bull. Torrey Bot. Club, 42, No. 10, Oct., 1915, pp. 571-577. (Issued Nov. 13, 1915.)

Based upon material in the National Herbarium; includes descriptions of 4 new species.

WOOTON, E. O., and PAUL C. STANDLEY. The ferns of New Mexico.

Amer. Fern Journ., 5, No. 3, July-Sept., 1915, pp. 65-78, pls. 5, 6.

GEOLOGY AND MINERALOGY.

GORDON, SAMUEL G. (See under Edgar T. Wherry.)

MATSON, GEORGE CHARLTON. The phosphate deposits of Florida.

Bull. U. S. Geol. Surv., No. 604, 1915, pp. 1-101, pls. 1-17, figs. 1, 2.

A thorough study of the phosphate deposits of Florida, dealing especially with the geologic and economic features.

MERRILL, GEORGE P. Notes on the composition and structure of the Indarch, Russia, meteoric stone.

Proc. U. S. Nat. Mus., 49, No. 2098, July 24, 1915, pp. 109-112, pl. 37.

Gives the results of a re-study and an analysis of the well-known Indarch meteorite, which fell on April 7, 1891. Its chief interest lies in the very detailed chemical analysis and the presence of the rare calcium sulphide, oldhamite.

——— Report on some carbonic acid tests on the weathering of marbles and limestones.

Proc. U. S. Nat. Mus., 49, No. 2108, July 26, 1915, pp. 347-349.

Gives the results of two series of experiments, extending over periods of seventy and ninety days respectively, to determine the relative solubility of various commercial limestones and marbles in water through

MERRILL, GEORGE P.—Continued.

which carbonic acid was being passed, the idea being to reproduce on an exaggerated scale the actual conditions to which such stones would be exposed.

——— Researches on the chemical and mineralogical composition of meteorites.

Proc. Nat. Acad. Sci., 1, July, 1915, pp. 429-431.

An abstract of the paper which follows.

——— Report on researches on the chemical and mineralogical composition of meteorites, with especial reference to their minor constituents.

Memoirs Nat. Acad. Sci., 14, 1st memoir, 1916, pp. 1-29, 1 insert.

Contains the final report on researches indicated by the title, which were begun some years ago, and on which a preliminary report was published in 1913. Gives the results of over twenty detailed chemical analyses and microscopic studies, and demonstrates with seeming conclusiveness the presence in meteorites in small quantities of platinum, palladium, iridium, ruthenium, and vanadium, but fails to substantiate the reported occurrence of antimony, arsenic, gold, lead, tin, tungsten, uranium, and zinc. Barium and strontium, although looked for, were not discovered in the slightest traces. A table of fifty-nine selected analyses accompanies the paper.

MERRILL, GEORGE P. Handbook and descriptive catalogue of the meteorite collections in the United States National Museum.

Bull. U. S. Nat. Mus., No. 94, May 25, 1916, pp. i-x, 1-207, pls. 1-41.

Comprises not merely a catalogue of the collections, but also descriptive matter relative to the classification, mineral and chemical composition, structure, early records, and phenomena of falls of meteorites, as well as detailed accounts of the more important falls represented in the collections. It is a wide departure from other published catalogues, at home and abroad, both in the descriptive matter and in the character and abundance of the illustrations. In view of the fact that the Shepard collection had but recently passed by the will of the late Dr. C. U. Shepard into the custody of the Museum, a plate portrait of Prof. Shepard and a photograph of his collection were also inserted.

WHERRY, EDGAR T. A peculiar oolite from Bethlehem, Pennsylvania.

Proc. U. S. Nat. Mus., 49, No. 2102, Aug. 13, 1915, pp. 153-156, pls. 40, 41.

A description, with figures, of an oolite showing a remarkable division of the grains into light and dark portions.

——— The chemical composition of bornite.

Science (n. s.), 42, No. 1086, Oct. 22, 1915, pp. 570, 571.

Discussion of a paper by Prof. A. F. Rogers in which a new interpretation of the evidence as to the formula of the mineral is suggested.

——— Notes on allophanite, fuchsite, and triphylite.

Proc. U. S. Nat. Mus., 49, No. 2118, Nov. 27, 1915, pp. 463-467.

WHERRY, EDGAR T.—Continued.

Mineralogical and chemical descriptions of new occurrences of these minerals.

——— A peculiar intergrowth of phosphate and silicate minerals.

Journ. Washington Acad. Sci., 6, No. 5, Mar. 4, 1916, pp. 105-108.

Description of a specimen sent to the Museum for identification, which proved to consist of colloidal vashegyite traversed by rhythmically precipitated laminae of a calcium aluminum silicate.

——— The lozenge-shaped cavities in the First Watchung Mountain zeolite deposits.

Journ. Washington Acad. Sci., 6, No. 7, Apr. 4, 1916, pp. 181-184.

Announcement of the important discovery that these cavities represent the mineral glauberite, which is indicated alike by the crystallographic, geologic, and genetic evidence.

——— and SAMUEL G. GORDON. An arrangement of minerals according to their occurrence.

Proc. Acad. Nat. Sci. Philadelphia, 67, Aug. 24, 1915, pp. 426-457.

Lists covering about 800 mineral species, arranged with reference to their genesis, associations, and occurrences.

WRIGHT, F. E. Note on the lithophysae in a specimen of obsidian from California.

Journ. Washington Acad. Sci., 6, No. 12, June 19, 1916, pp. 367-369.

Deals particularly with the question of the origin of the lithophysae and emphasis is placed on the pressure of the gases set free during the crystallization of the spherulites.

PALEONTOLOGY.

BASSLER, RAY S. Bibliographic index of American Ordovician and Silurian fossils.

Bull. U. S. Nat. Mus., No. 92, Nov. 1, 1915, 1, pp. i-viii, 1-718; 2, pp. i-iv, 719-1521, pls. 1-4.

BASSLER, RAY S.—Continued.

Gives the entire bibliography and synonymy of the hundreds of genera and thousands of species found in America in rocks of Ordovician and Silurian periods. In addition, the genotypes of the genera are given, and

BASSLER, RAY S.—Continued.

also the formation, the type locality and the known wider distribution of the species. In cases where the U. S. National Museum has the type material, this is noted and the catalogue numbers are cited. At the end of the bibliography proper is given an index of specific names and their generic combinations (pp. 1343–1406), a bibliographic classification and index of genera (1407–1440), faunal lists of American Ozarkian to lowest Helderbergian species (1441–1509), and a list of American Ordovician and Silurian formations showing their place in the geologic column (1511–1521). Finally, at the end of the work, are four very important correlation tables of the geologic divisions and their occurrence in the various basins of deposit.

BREGER, CARPEL LEVENTHAL. (See under Henry Shaler Williams.)

CLARK, WILLIAM BULLOCK, and MAYVILLE W. TWITCHELL. The Mesozoic and Cenozoic Echinodermata of the United States.

Monogr. U. S. Geol. Surv., 54, 1915, pp. 1-341, pls. 1-108.

A general systematic study of the Mesozoic and Cenozoic Echinodermata of the United States, including an extensive bibliography and descriptions of species, many of which are new.

COCKERELL, T. D. A. British fossil insects.

Proc. U. S. Nat. Mus., 49, No. 2119, Dec. 11, 1915, pp. 469–499, pls. 60–65.

Presents a summary of the knowledge of British fossil insects to date. Founds 1 new family, 11 new genera, and describes and figures 44 new species.

DALL, WILLIAM HEALEY. Note on the Oligocene of Tampa, Florida, the Panama Canal Zone, and the Antillean region.

Proc. Malacol. Soc. London, 12, Pt. 1, Mar. 20, 1916, pp. 38, 39.

Correction of some erroneous statements by M. Maurice Cossmann.

GILMORE, CHARLES W. A new restoration of Stegosaurus.

Proc. U. S. Nat. Mus., 49, No. 2110, Aug. 23, 1915, pp. 355-357, pl. 52, 1 fig.

GILMORE, CHARLES W.—Continued.

Describes briefly a new life restoration of *Stegosaurus stenops*, based on skeletal material in the collections of the U. S. National Museum.

——— On the fore limb of Allosaurus fragilis.

Proc. U. S. Nat. Mus., 49, No. 2120, Nov. 27, 1915, pp. 501–513, figs. 1–7.

Describes for the first time a complete limb of *Allosaurus fragilis* Marsh. It is shown that the fore limb originally described and figured by Marsh as pertaining to the genus *Allosaurus* is in great part that of *Ceratosaurus nasicornis* Marsh.

——— Osteology of Thescelosaurus, an orthopodous dinosaur from the Lance formation of Wyoming.

Proc. U. S. Nat. Mus., 49, No. 2127, Dec. 23, 1915, pp. 591–616, pls. 79–82, figs. 1–20.

A detailed account of the osteological structure of *Thescelosaurus neglectus*, followed by a brief discussion of the classification and relationships of the genus. It is shown that *Thescelosaurus* has its closest affinities with *Hypsilophodon* of the English Wealden. A life restoration, modeled by the author from the type specimen, is presented for the first time.

——— Description of a new species of tortoise from the Jurassic of Utah.

Annals Carnegie Mus., 10, Nos. 1-2, Art. 1, Jan. 31, 1916, pp. 7–12, pls. 1, 2, figs. 1, 2.

Describes the new species *Glyptops utahensis*, the type specimen of which is in the Carnegie Museum, Pittsburgh, Pa.

——— Description of two new species of fossil turtles, from the Lance formation of Wyoming.

Proc. U. S. Nat. Mus., 50, No. 2137, May 31, 1916, pp. 641–646, pls. 33–35.

Describes the two new species *Baena hayi* and *Aspideretes lancensis*.

HAY, OLIVER P. A contribution to the knowledge of the extinct sirenian Desmostylus hesperus Marsh.

Proc. U. S. Nat. Mus., 49, No. 2113, Aug. 31, 1915, pp. 381–397, pls. 56–58.

Reviews the history of the sirenian genus *Desmostylus* Marsh, which

HAY, OLIVER P.—Continued.

hitherto has been but imperfectly known, and discusses at length the data relative to the known material referred to the genus. A new family, Desmostylidae, is proposed and defined, and the genus *Desmostylus* redefined, based on a nearly complete skull from the Miocene shales in the vicinity of Yaquina Bay, Oreg. The specimen is referred to the species *Desmostylus hesperus* Marsh, and is compared in detail with other known Sirenia, particularly a portion of a skull from Japan, described but not named by Yoshiwara and Iwasaka. The author considers the Japanese specimen as a distinct but closely related species, and gives it the name *Desmostylus watasei*.

KNOWLTON, F. H. Note on a recent discovery of fossil plants in the Morrison formation.

Journ. Wash. Acad. S-i., 6, No. 7, Apr. 4, 1916, pp. 180, 181.

Notes the discovery of plants in the Morrison formation in the Bighorn Basin of Wyoming, and concludes that they indicate Cretaceous age.

——— The flora of the Fox Hills sandstone.

Prof. Paper, U. S. Geol. Surv., 98-H, June 3, 1916, pp. 85-93, pls. 15-18.

Describes the first flora known from the Fox Hills sandstone. Thirteen forms are enumerated, all from the vicinity of Greeley, Colo.

RATHBUN, MARY J. Description of a new genus and species of fossil crab from Port Townsend, Washington.

Amer. Journ. Sci., 41, Apr., 1916, pp. 344-346, 1 fig.

Describes and figures the new genus and species *Branchioplax washingtoniana*. The specimen on which the description is based is the property of the Yale University Museum, but a plastotype is in the collections of the U. S. National Museum.

SHUFELDT, R. W. Fossil remains of the extinct cormorant Phalacrocorax macropus found in Montana.

The Auk, 32, No. 4, Oct., 1915, pp. 485-488, pl. 30.

Describes a fragmentary skeleton from Montana, the first recorded occurrence of this form outside the state of Oregon.

TWITCHELL, MAYVILLE W. (See under William Bullock Clark.)

WALCOTT, CHARLES D. Cambrian geology and paleontology, III. No. 3.—Cambrian trilobites.

Smithsonian Misc. Colls., 64, No. 3, Jan. 14, 1916, pp. 157-258, pls. 24-38.

The second of the series on Cambrian geology and paleontology to bear this name; nine other papers on trilobites from the same series also listed. Describes 2 new families, 7 new genera, 47 new species, and 3 new varieties, besides 21 other species previously discussed. Appalachian localities are strongly represented. A marked feature is the description of 4 genera of the order Proparia, which, taken with the genus *Burlingia*, establish the existence of a strong group of the order in Cambrian time.

——— Evidences of primitive life.

Rep. Smithsonian Inst., 1915, Pub. 2389, 1916, pp. 235-255, pls. 1-18, 1 fig.

A summary of Secretary Walcott's investigations and publications of the past ten or fifteen years, with special emphasis on certain important phases. Discusses pre-Cambrian Algonkian North America, fossil bacteria, Algonkian fossil algal remains, Cambrian sections, Cambrian faunas of China, the Middle Cambrian fauna of Burgess Pass, British Columbia, including holothurians, annelids, trilobites, etc. Cambrian Brachiopoda, evolution of Cambrian Crustacea, and trilobites of the Lower, Middle, and Upper Cambrian. Designed as a review to answer the many inquiries constantly received as to the scope and character of the Secretary's work.

——— Cambrian geology and paleontology, III. No. 4.—Relations between the Cambrian and pre-Cambrian formations in the vicinity of Helena, Montana.

Smithsonian Misc. Colls., 64, No. 4, June 24, 1916, pp. 259-301, pls. 39-44, figs. 10-13.

A reply to the statements of Dr. August Rothpletz in his paper entitled "Die Fauna der Beltformation bei Helena in Montana," Munich, 1915, pp. 1-48, with 3 plates. The author reviews his own and others' investigations of this region, and shows by sections and plates the basis on which he

WALCOTT, CHARLES D.—Continued.

established extensive pre-Cambrian formations; he demonstrates by maps and other evidence that Dr. Rothpletz failed in his 4-days' investigation of the region to study actual pre-Cambrian strata because his attention was confined to Middle Cambrian formations and fauna which he mistook for the pre-Cambrian, hence his arguments have no foundation.

WILLIAMS, HENRY SHALER (assisted by CARPEL LEVENTHAL BREGER). The fauna of the Chapman sandstone of Maine.

Prof. Paper, U. S. Geol. Surv., 89, 1916, pp. 1-347, pls. 1-27, figs. 1, 2.

Consists principally of a description of the fossils of the Chapman sandstone of Maine. The fauna is stated to have close affinities with the Helderbergian (Lower Devonian) fauna of New York, but carries more European types than the latter. This dissimilarity is believed to be due to slight differences in age and local conditions rather than to the fact that the faunas were derived from different sources.

WILLIAMS, HENRY SHALER—Continued.

MINERAL TECHNOLOGY.

GILBERT, CHESTER G. Sources of nitrogen compounds in the United States.

Smithsonian Inst. Special Pub. No. 2421, June 30, 1916, pp. 1-12.

——— Mineral-industry exhibits at the National Museum.

Engineering and Mining Journ., 100, No. 12, Sept. 18, 1915, pp. 470-472, 1 fig.

MITMAN, C. W. Coal and coal products exhibited in the U. S. National Museum.

Mining World, 43, Oct. 23, 1915, p. 647.

——— Gypsum in the National Museum.

Rock Products and Building Materials, 16, No. 5, June 7, 1915, p. 32, 1 fig.

OCEANOGRAPHY.

CLARK, AUSTIN H. On the temperature of the water below the 1000-fathom line between California and the Hawaiian Islands.

Journ. Washington Acad. Sci., 6, No. 7, Apr. 4, 1916, pp. 175-177.

CLARK, AUSTIN H.—Continued.

The temperature of the ocean floor is shown to increase slightly from California westward to the Hawaiian Islands.

EXPLORATIONS AND FIELD WORK.

HENDERSON, JOHN B. The cruise of the Tomas Barrera.

G. P. Putnam's Sons, New York & London, 1916, pp. 1-320, with illustrations and maps.

Narrative of a scientific expedition to western Cuba and the Colorados Reefs, with observations on the geology, fauna and flora of the region.

MARSHALL, WM. B., and C. R. SHOEMAKER. Biologic study of Chesapeake Bay.

Smithsonian Misc. Colls., 66, No. 3, pp. 53, 54.

Brief account of two cruises of the Fisheries steamer *Fish Hawk* in a hydrographic and biologic study of Chesapeake Bay, through which about 2,000 specimens of marine invertebrates were secured for the Museum.

MARSHALL, WM. B., and C. R. SHOEMAKER—Continued.

SHOEMAKER, C. R. Expedition to St. Thomas, Danish West Indies.

Smithsonian Misc. Colls., 66, No. 3, pp. 54-57, figs. 69-72.

Brief account of an expedition to St. Thomas under the auspices of the Carnegie Institution of Washington to collect corals and other marine invertebrates, from which the Museum received about 5,000 specimens.

Explorations and field-work of the Smithsonian Institution in 1914.

Smithsonian Misc. Colls., 65, No. 6, July 2, 1915, pp. 1–95, pl. 1, figs. 1–89.

Notes on the following expeditions, from the most of which specimens were acquired for the Museum collections: Geological explorations in the Rocky Mountains; Studies in coastal plain stratigraphy and paleontology; Explorations for fossil echinoderms in western New York; Fossil collecting at the Cumberland cave deposit; Hunting vertebrate fossils in Montana; Stratigraphic studies in central Tennessee; Geology of certain areas in eastern Pennsylvania; Geological studies in New York State; Expedition to Borneo and Celebes; Expeditions to the Far East; the "Tomas Barrera" Expedition in western Cuba; Experiments with Cerions in the Florida Keys; Bird studies in Illinois; Cactus investigations in Peru, Bolivia, and Chile; Botanical explorations in New Mexico and Texas; Collecting fossils on Chesapeake Bay; Anthropological investigations in Guatemala; Anthropological researches in Africa and Siberia; Preparation of exhibits illustrating the natural history of man; Prehistoric remains in New Mexico; Further study of the Cherokee sacred formulas; The sun and the ice people among the Tewa Indians of New Mexico; Work among the Iroquois; Osage songs and rituals; Preservation of Indian music; Ethnological researches among the Kalapuya Indians; Investigations among the Stockbridge, Brotherton, and Fox Indians; Studies of solar radiation.

Explorations and field-work of the Smithsonian Institution in 1915.

Smithsonian Misc. Colls., 66, No. 3, May 27, 1916, pp. 1–119, figs. 1–141.

Covers the following expeditions, from the majority of which the Museum also obtained material: Geological explorations in the Rocky Mountains; The Indiana mastodon; Paleontological and stratigraphic studies in the Paleozoic rocks; Explorations in Siberia; Collecting fossil echinoderms in the Ohio valley; Geological work in Pennsylvania and Virginia; Geological specimens from New Zealand; Expedition to Borneo and Celebes; Explorations in China and Manchuria; Work by Copley Amory, Jr., in eastern Siberia; Experiments with Cerions on the Florida Keys; Biologic study of Chesapeake Bay; Expedition to St. Thomas, Danish West Indies; Cactus investigations in Brazil and Argentina; Shell mounds on the Pacific coast; Archeological reconnoissance in western Utah; Trip to the Chippewa Indians of Minnesota; The Nacoochee mound in Georgia; Prehistoric remains in Arizona, New Mexico, and Colorado; Ethnological researches in Oregon and Washington; Work among the Fox and Sauk Indians; Studies among the Cayuga Indians; Study of Indian music; Osage war rites; Ethnological work among the Natchez, Creek, and Chickasaw Indians; Work among the Indians of California and Arizona; Experimental flights with the original Langley aerodrome; Fog clearing investigations; Studies in solar radiation.